FIG.1

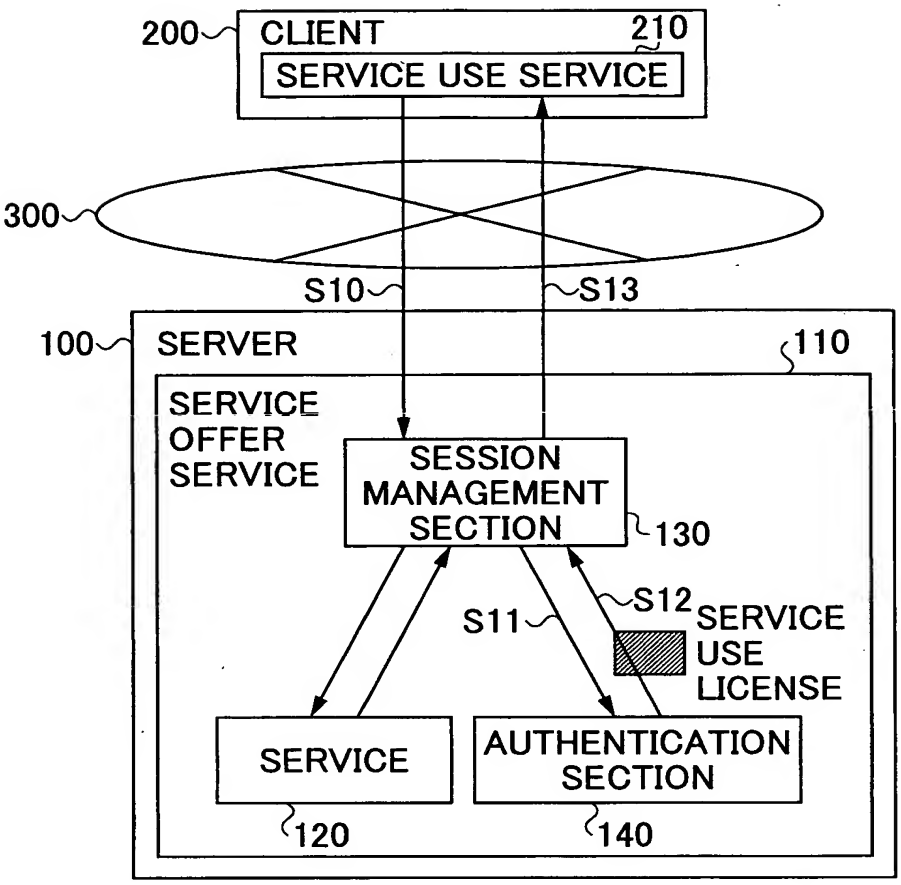

200
CLIENT
210
SERVICE USE SERVICE
300
S10
S13
100
SERVER
110
SERVICE OFFER SERVICE
SESSION MANAGEMENT SECTION
130
S11
S12
SERVICE USE LICENSE
SERVICE
120
AUTHENTICATION SECTION
140

FIG.2

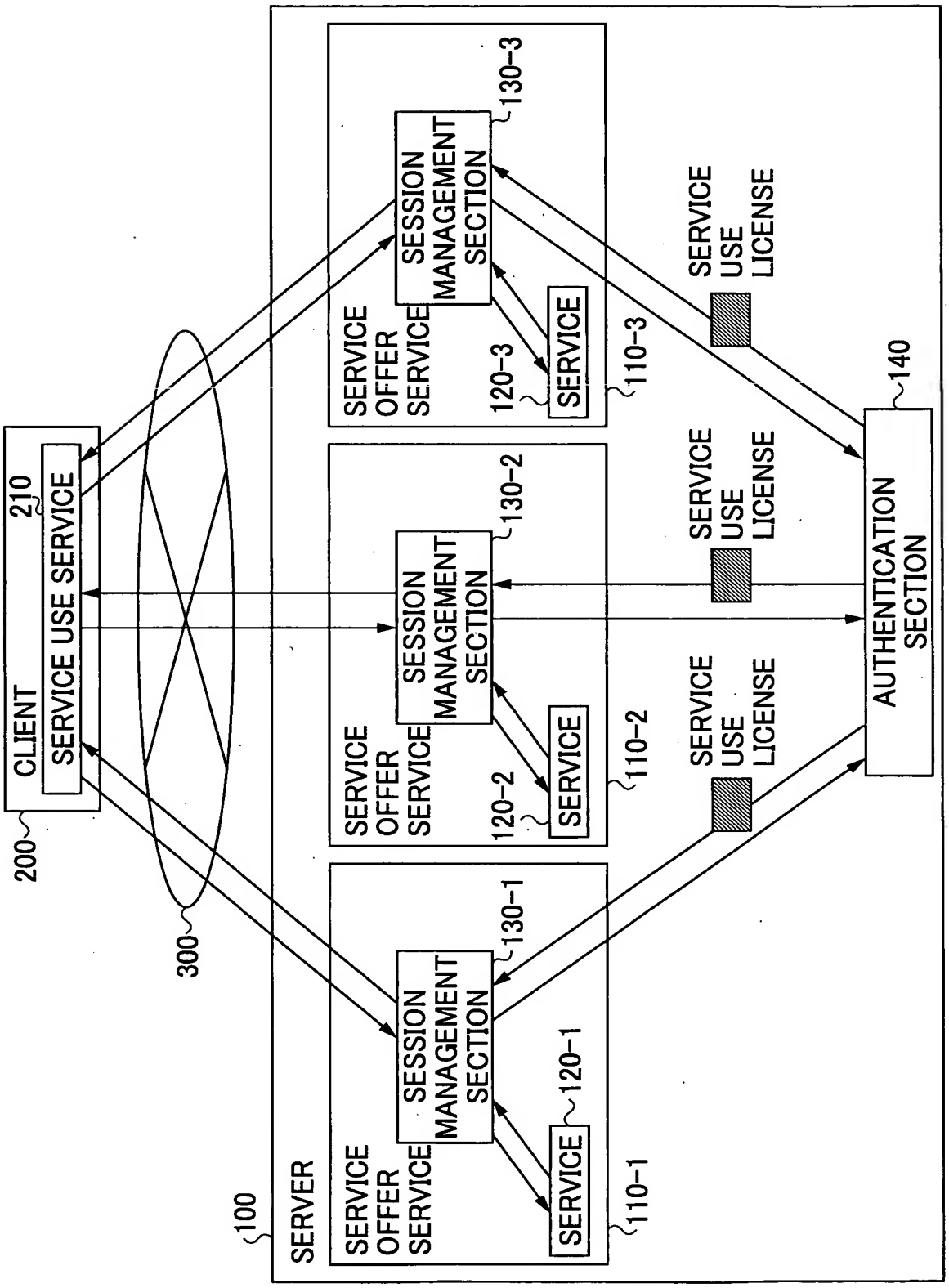

CLIENT
SERVICE USE SERVICE
210
200
300
SERVER
100
SERVICE OFFER SERVICE
SESSION MANAGEMENT SECTION
130-1
120-1
SERVICE
110-1
SERVICE OFFER SERVICE
SESSION MANAGEMENT SECTION
130-2
120-2
SERVICE
110-2
SERVICE OFFER SERVICE
SESSION MANAGEMENT SECTION
130-3
120-3
SERVICE
110-3
SERVICE USE LICENSE
SERVICE USE LICENSE
SERVICE USE LICENSE
AUTHENTICATION SECTION
140

FIG.3

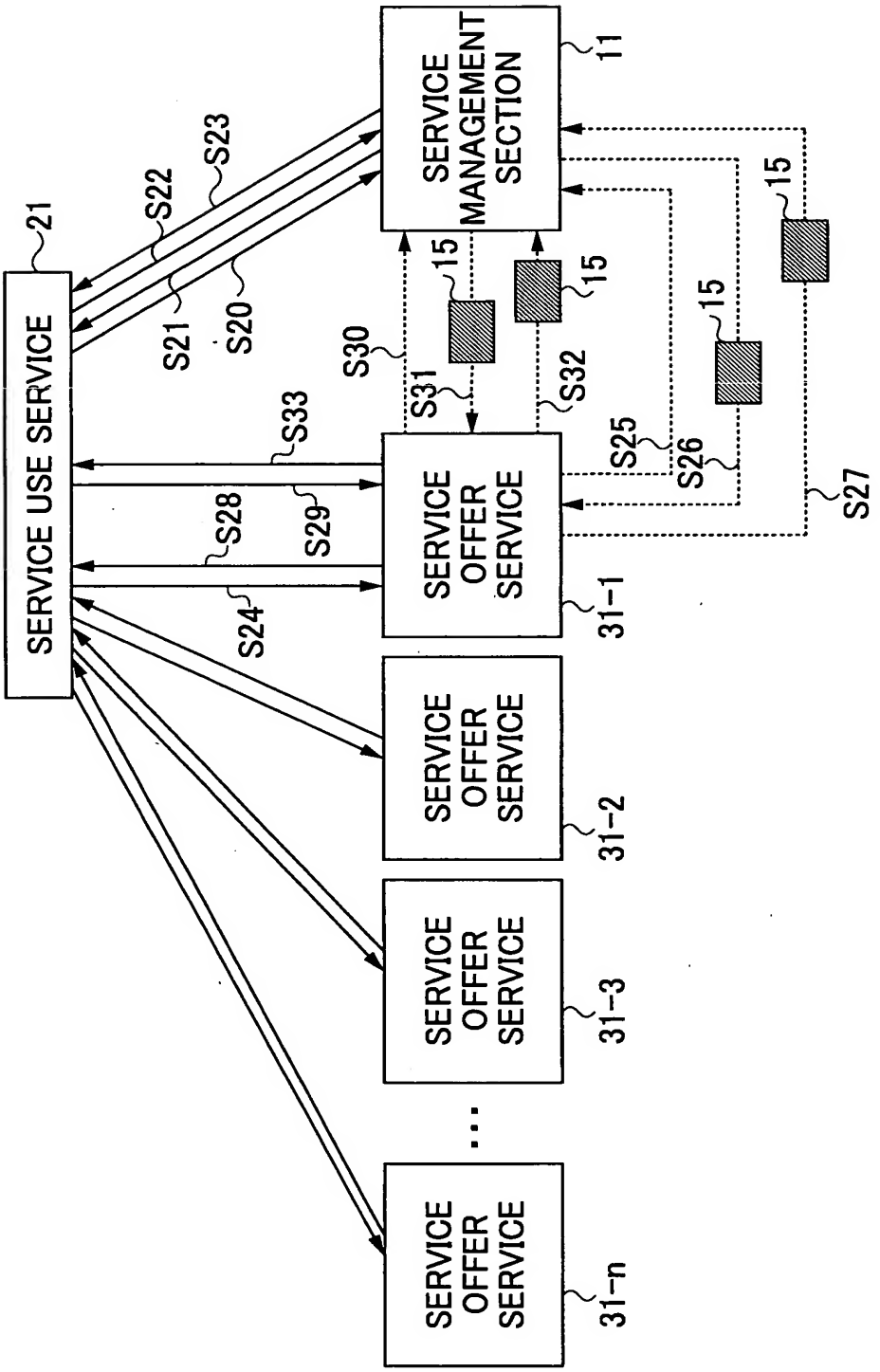

SERVICE USE SERVICE
21
SERVICE MANAGEMENT SECTION
11
SERVICE OFFER SERVICE
31-1
SERVICE OFFER SERVICE
31-2
SERVICE OFFER SERVICE
31-3
SERVICE OFFER SERVICE
31-n
15
S20
S21
S22
S23
S24
S25
S26
S27
S28
S29
S30
S31
S32
S33

FIG.4

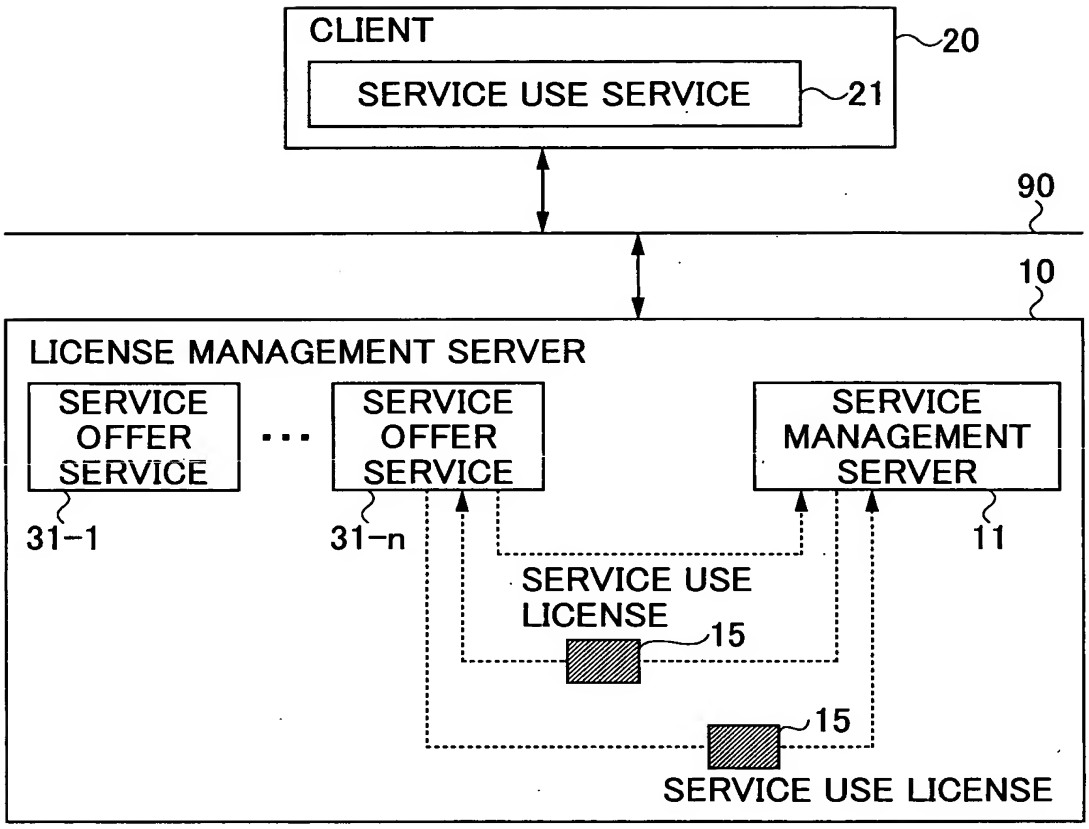

CLIENT
20
SERVICE USE SERVICE
21
90
10
LICENSE MANAGEMENT SERVER
SERVICE OFFER SERVICE
SERVICE OFFER SERVICE
SERVICE MANAGEMENT SERVER
31-1
31-n
11
SERVICE USE LICENSE
15
15
SERVICE USE LICENSE

FIG.5

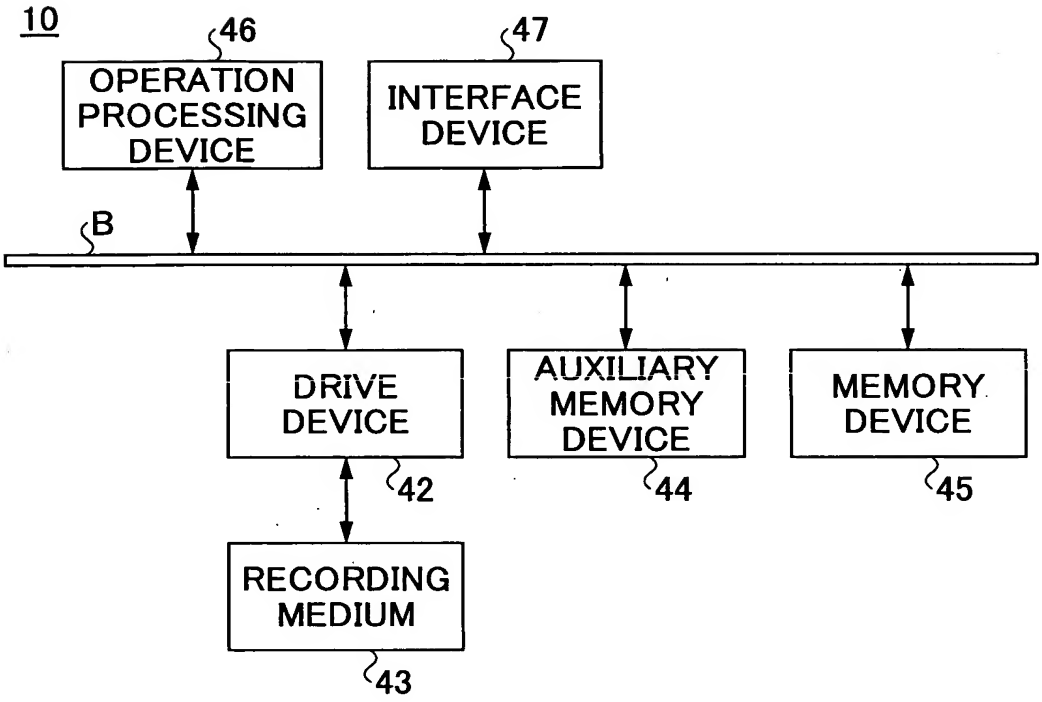

10
46
OPERATION PROCESSING DEVICE
47
INTERFACE DEVICE
B
DRIVE DEVICE
42
AUXILIARY MEMORY DEVICE
44
MEMORY DEVICE
45
RECORDING MEDIUM
43

FIG.6

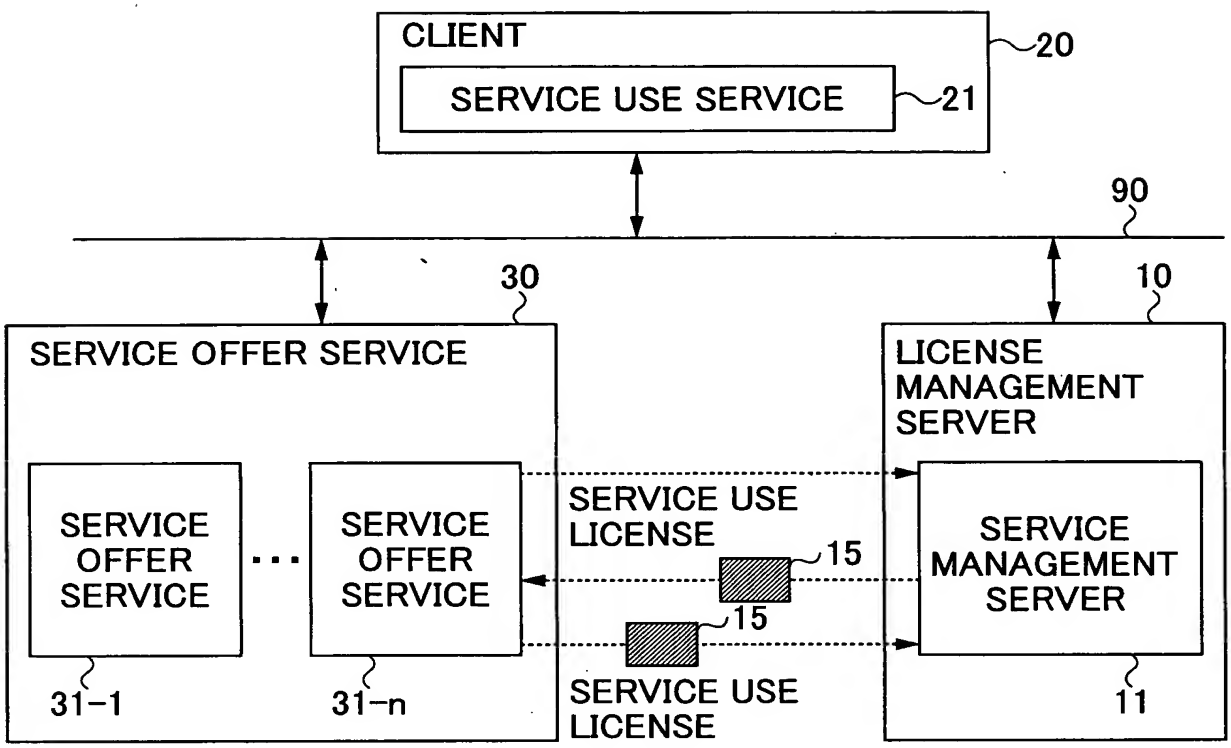

CLIENT
20
SERVICE USE SERVICE
21
90
30
10
SERVICE OFFER SERVICE
LICENSE MANAGEMENT SERVER
SERVICE OFFER SERVICE
SERVICE OFFER SERVICE
SERVICE USE LICENSE
15
SERVICE MANAGEMENT SERVER
15
SERVICE USE LICENSE
31-1
31-n
11

FIG.7

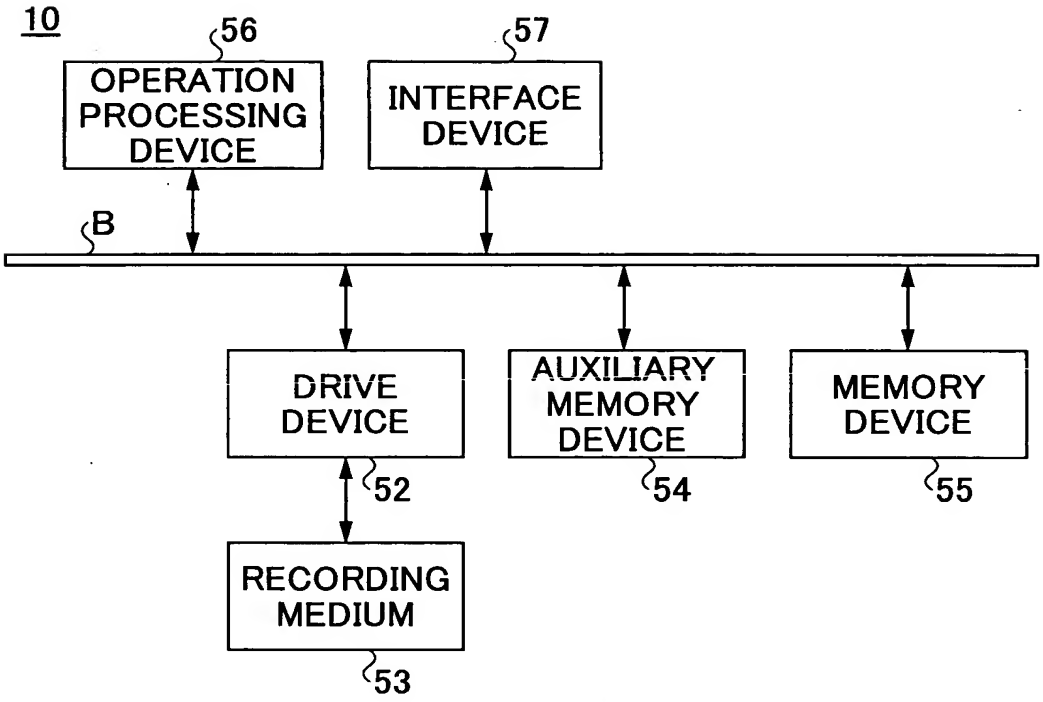

10
56
OPERATION PROCESSING DEVICE
57
INTERFACE DEVICE
B
DRIVE DEVICE
52
AUXILIARY MEMORY DEVICE
54
MEMORY DEVICE
55
RECORDING MEDIUM
53

FIG.8

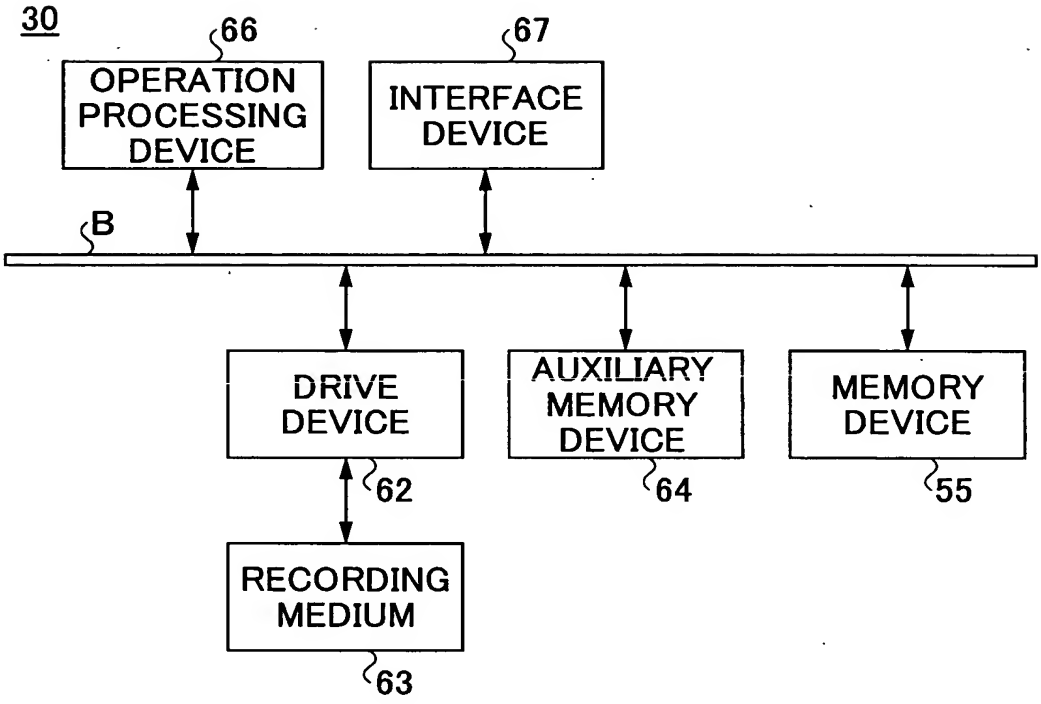

30
66
67
OPERATION PROCESSING DEVICE
INTERFACE DEVICE
B
DRIVE DEVICE
AUXILIARY MEMORY DEVICE
MEMORY DEVICE
62
64
55
RECORDING MEDIUM
63

FIG.9

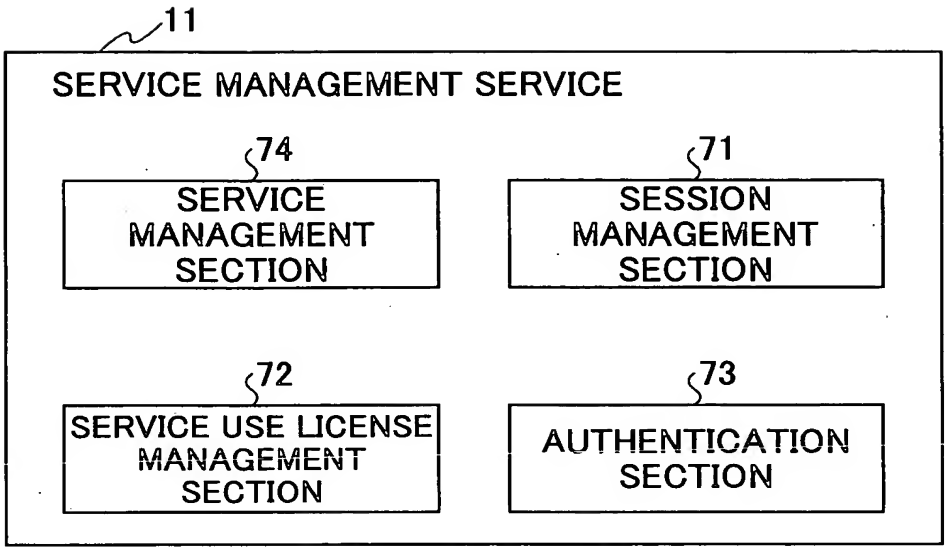

11
SERVICE MANAGEMENT SERVICE
74
SERVICE MANAGEMENT SECTION
71
SESSION MANAGEMENT SECTION
72
SERVICE USE LICENSE MANAGEMENT SECTION
73
AUTHENTICATION SECTION

FIG.10

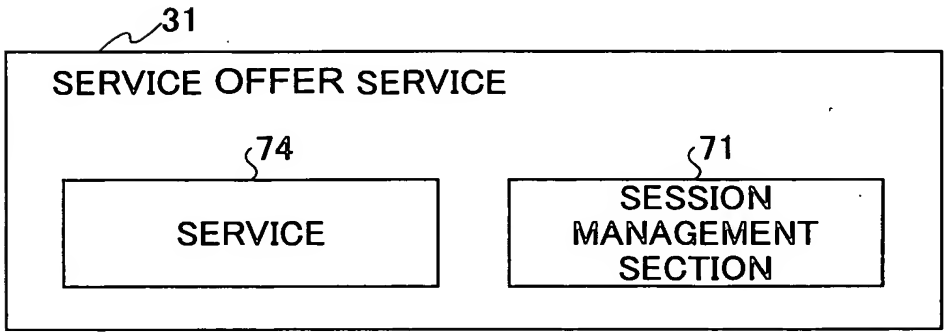

31
SERVICE OFFER SERVICE
74
SERVICE
71
SESSION MANAGEMENT SECTION

FIG.11

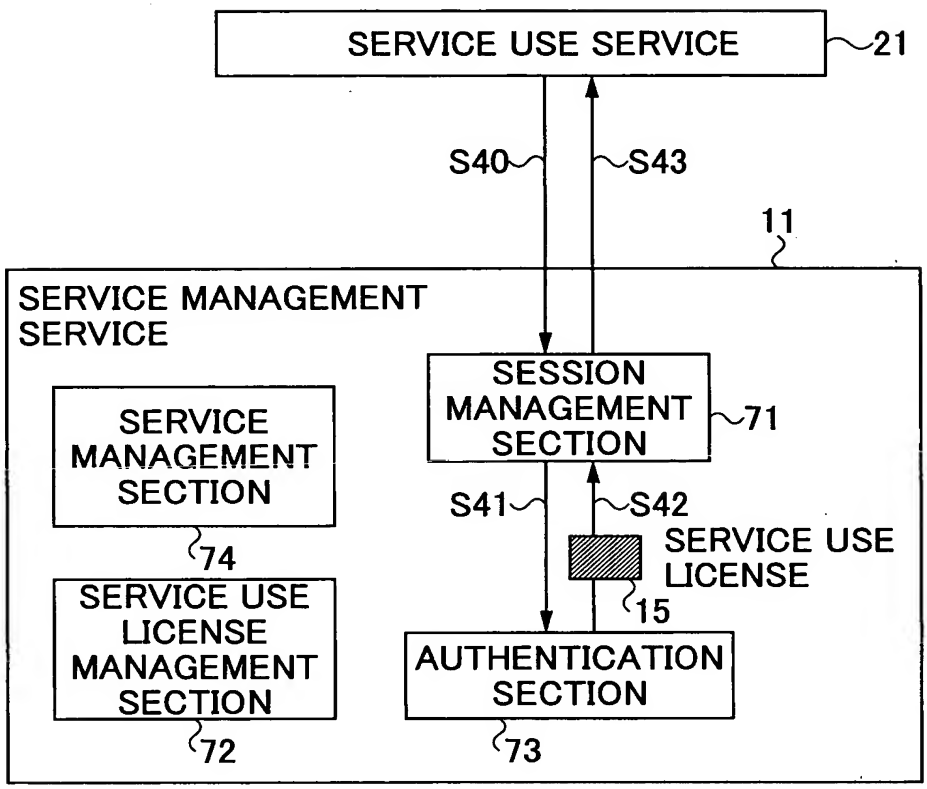

SERVICE USE SERVICE
21
S40
S43
11
SERVICE MANAGEMENT SERVICE
SESSION MANAGEMENT SECTION
71
SERVICE MANAGEMENT SECTION
74
S41
S42
SERVICE USE LICENSE
15
SERVICE USE LICENSE MANAGEMENT SECTION
72
AUTHENTICATION SECTION
73

FIG.12

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/“
        SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/“
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/“>
 <SOAP-ENV:Body>
  <tmns:startSession  xmlns:tmns="urn:service"
   <scheme>BASIC</scheme>
   <userid>test_user</userid>
   <password>test_password</password>
   <timeLimit>2000</timeLimit>
  </tmns:startSession>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

FIG.13

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
 <soapenv:Body>
  <ns1:startSessionResponse
            soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
            xmlns:ns1="urn:service">
   <returnValue>1033965393594-382386-42-59-12543481-32</returnValue>
  </ns1:startSessionResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 12 OF 49

FIG.14

FIG.15

18

FIRST SESSION ID	FIRST SESSION OBJECT
1033965393594-382386-42-59-12543481-32	FIRST SESSION OBJECT 1
30383480-398139010-132813-1299918174	FIRST SESSION OBJECT 2
1817430383480-398139010-132813-12999	FIRST SESSION OBJECT 3
⋮	⋮

FIG.16

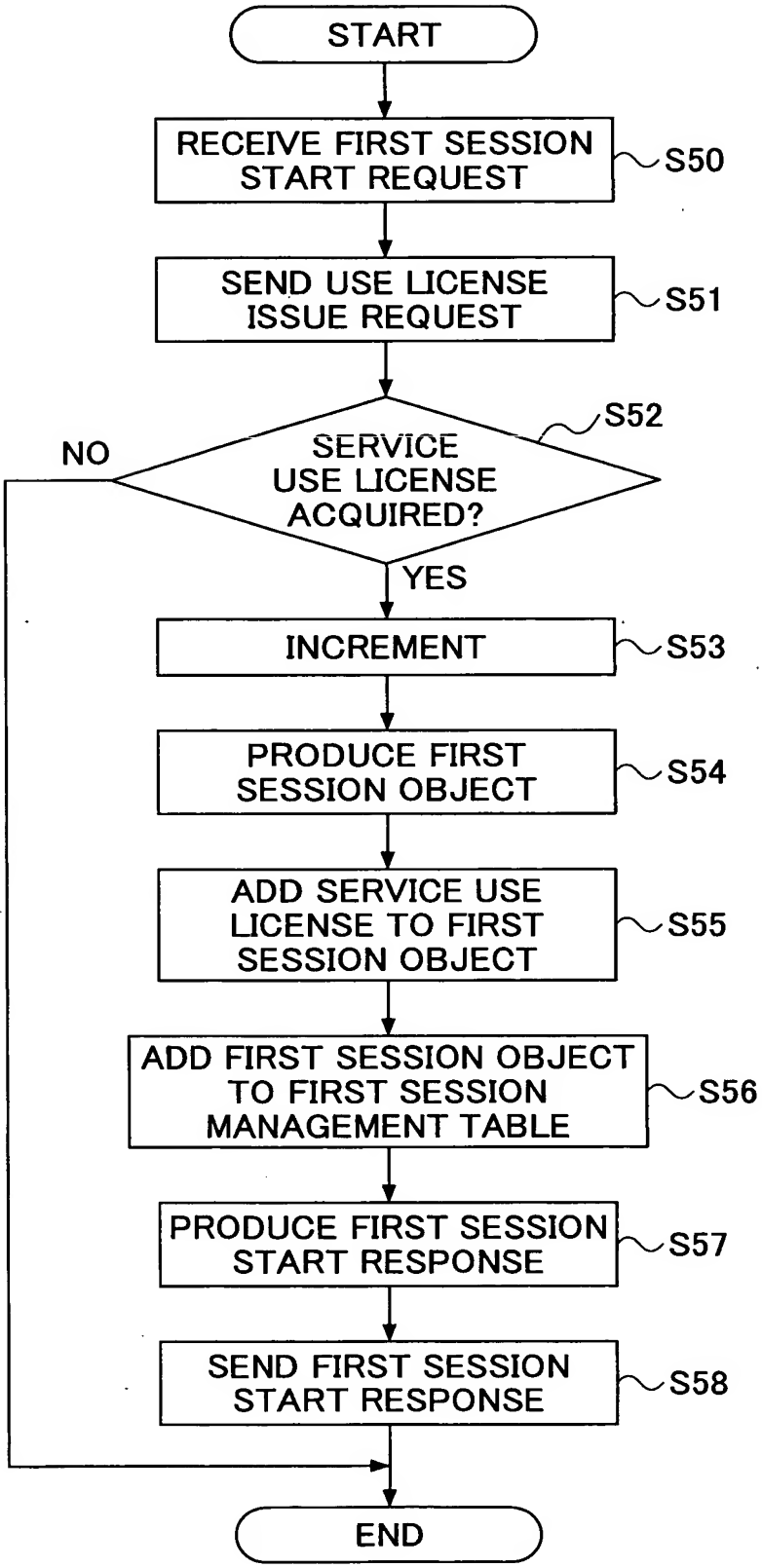

START
RECEIVE FIRST SESSION START REQUEST
S50
SEND USE LICENSE ISSUE REQUEST
S51
SERVICE USE LICENSE ACQUIRED?
S52
NO
YES
INCREMENT
S53
PRODUCE FIRST SESSION OBJECT
S54
ADD SERVICE USE LICENSE TO FIRST SESSION OBJECT
S55
ADD FIRST SESSION OBJECT TO FIRST SESSION MANAGEMENT TABLE
S56
PRODUCE FIRST SESSION START RESPONSE
S57
SEND FIRST SESSION START RESPONSE
S58
END

FIG.17

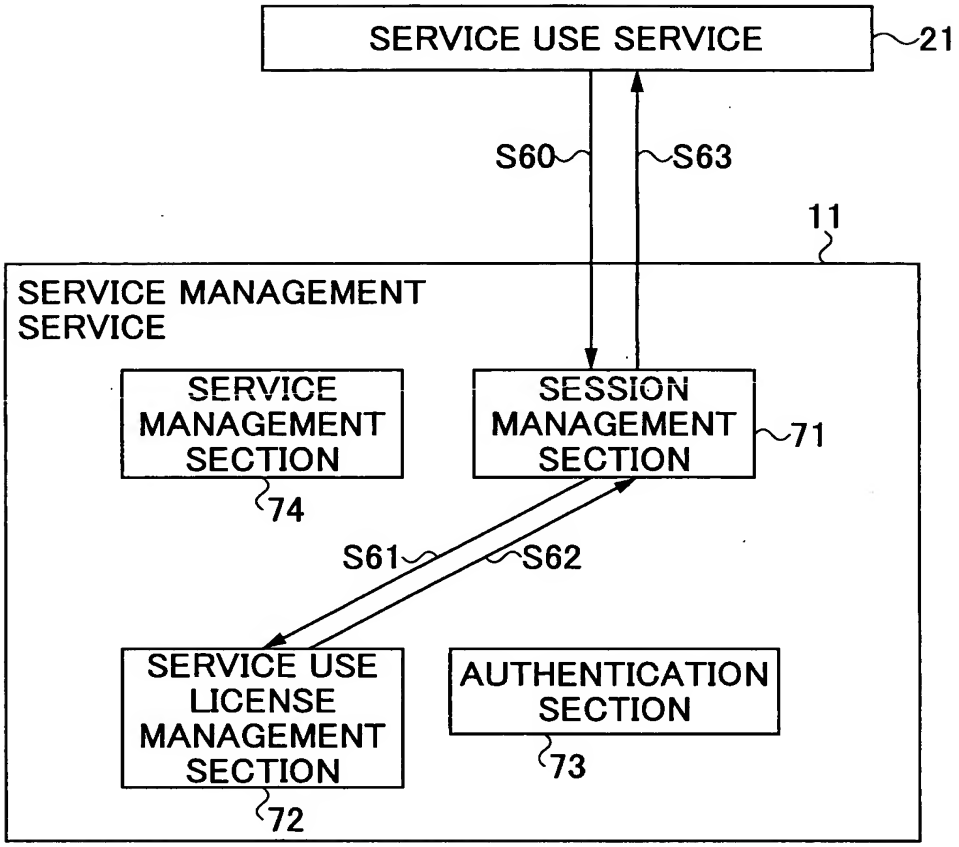

SERVICE USE SERVICE
21
S60
S63
11
SERVICE MANAGEMENT SERVICE
SERVICE MANAGEMENT SECTION
74
SESSION MANAGEMENT SECTION
71
S61
S62
SERVICE USE LICENSE MANAGEMENT SECTION
72
AUTHENTICATION SECTION
73

FIG.18

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/“
        SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/“
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/“>
 <SOAP-ENV:Body>
  <tmns:getLicenseId  xmlns:tmns="urn:service"
   <sessionId>1033965393594-382386-42-59-12543481-32</sessionId>
   <timeLimit>2000</timeLimit>
  </tmns:getLicenseId>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 16 OF 49

FIG.19

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
 <soapenv:Body>
  <ns1:getLicenseIdResponse
            soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
            xmlns:ns1="urn:service">
   <returnValue>abd120238490fgava-fa8fa9fff988a</returnValue>
  </ns1:getLicenseIdResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 17 OF 49

FIG.20

26

LICENSE ID	SERVICE USE LICENSE
abd120238490fgava-fa8fafff988a	SERVICE USE LICENSE 1
fakdfe2349432qnfaewr0erae	SERVICE USE LICENSE 2
Fasr0-ea431241fepj fa2fsalk	SERVICE USE LICENSE 3
⋮	⋮

FIG.21

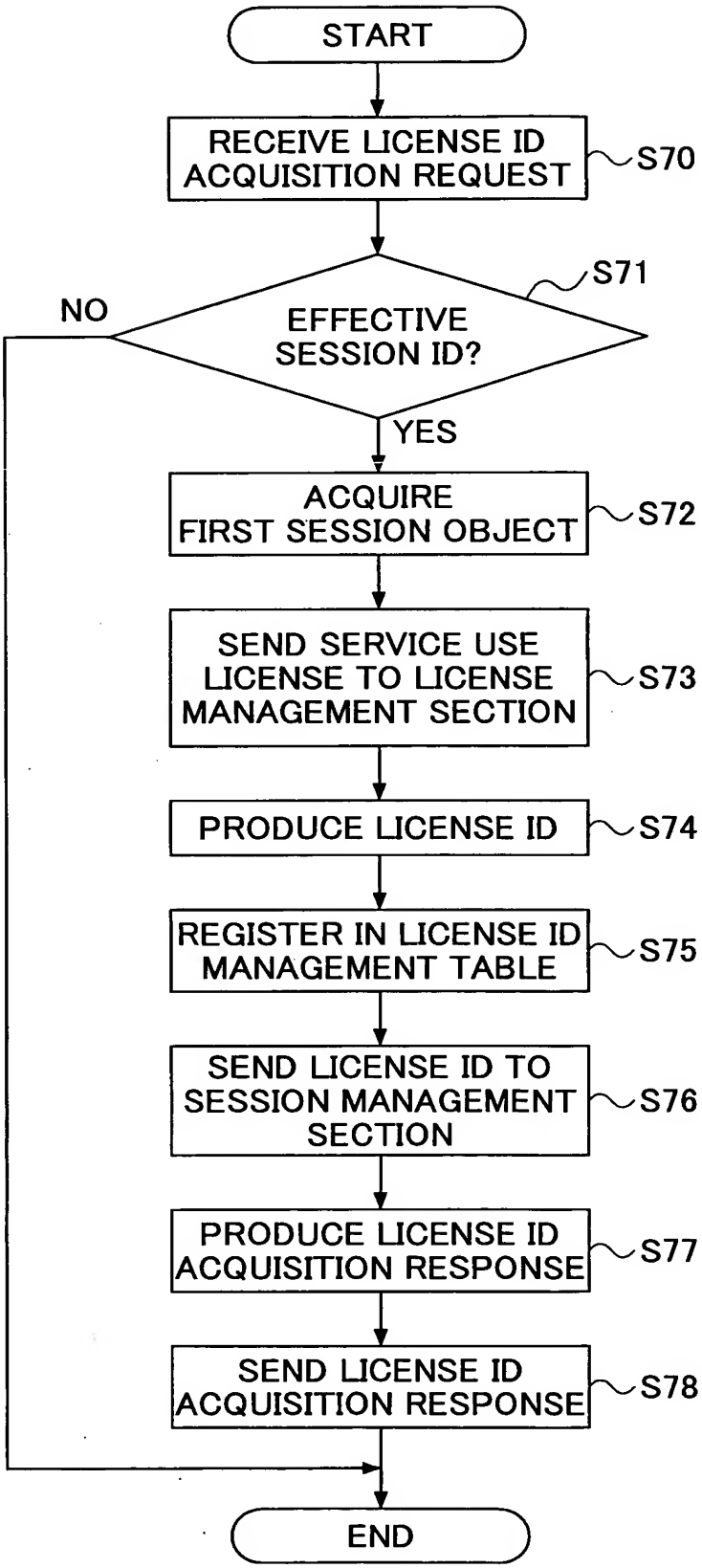

START
RECEIVE LICENSE ID ACQUISITION REQUEST
S70
EFFECTIVE SESSION ID?
S71
NO
YES
ACQUIRE FIRST SESSION OBJECT
S72
SEND SERVICE USE LICENSE TO LICENSE MANAGEMENT SECTION
S73
PRODUCE LICENSE ID
S74
REGISTER IN LICENSE ID MANAGEMENT TABLE
S75
SEND LICENSE ID TO SESSION MANAGEMENT SECTION
S76
PRODUCE LICENSE ID ACQUISITION RESPONSE
S77
SEND LICENSE ID ACQUISITION RESPONSE
S78
END

FIG.22

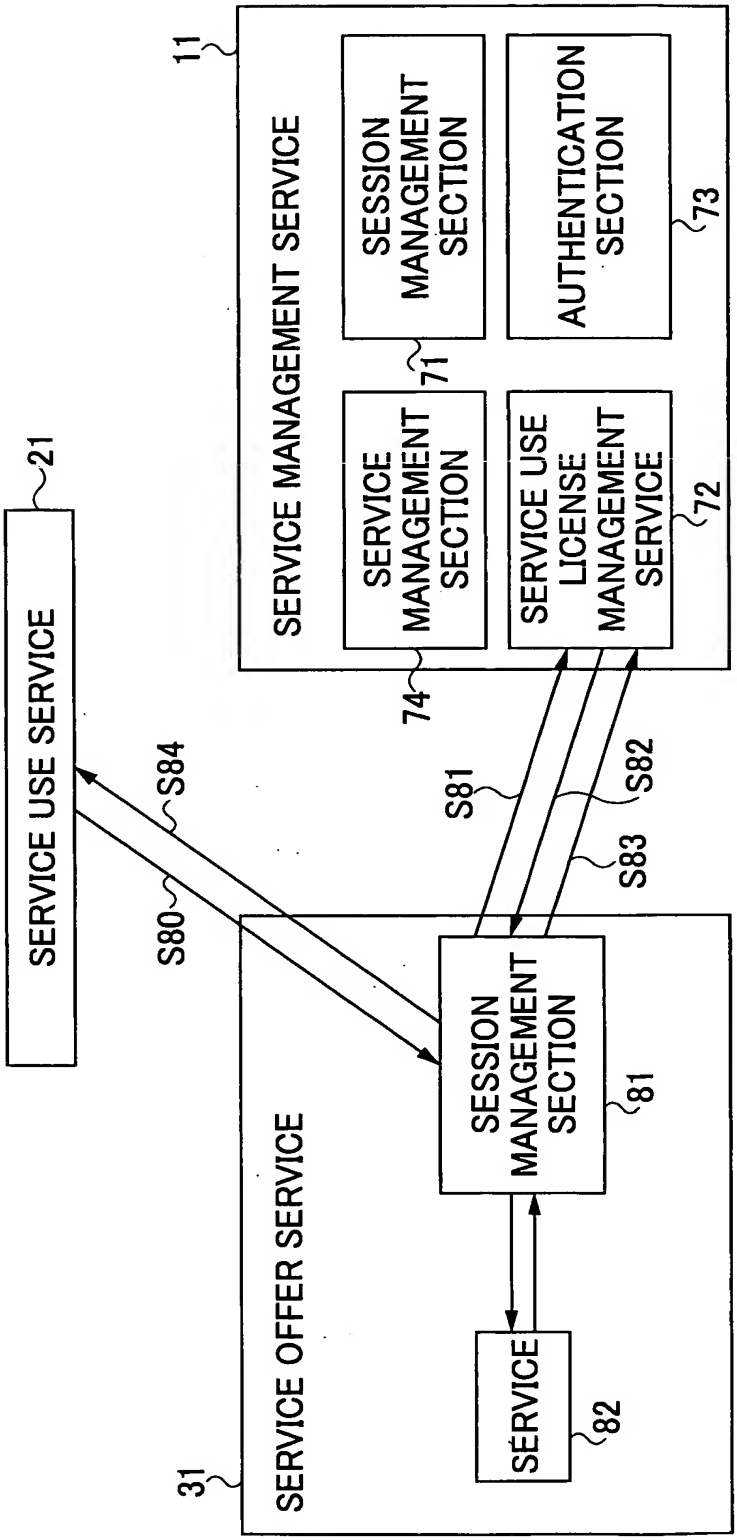

11
SERVICE MANAGEMENT SERVICE
SESSION MANAGEMENT SECTION
71
AUTHENTICATION SECTION
73
SERVICE MANAGEMENT SECTION
74
SERVICE USE LICENSE MANAGEMENT SERVICE
72
21
SERVICE USE SERVICE
S84
S80
S81
S82
S83
SESSION MANAGEMENT SECTION
81
SERVICE
82
31
SERVICE OFFER SERVICE

FIG.23

```
<SOAP-ENV:Envelope
        xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/“
        SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/“
        xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/“>
 <SOAP-ENV:Body>
  <tmns:startSession  xmlns:tmns="urn:service"
   <scheme>LICENCEID</scheme>
   <userid></userid>
   <password>abd120238490fgava-fa8fa9fff988a</password>
   <timeLimit>2000</timeLimit>
  </tmns:startSession>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

FIG.24

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
 <soapenv:Body>
  <ns1:startSessionResponse
            soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
            xmlns:ns1="urn:service">
   <returnValue>OK</returnValue>
   <stringOut>1033965402176-4569106-116-112-5566-32-38-65</stringOut>
  </ns1:startSessionResponse>
 </soapenv:Body>
</soapenv:Envelope>
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 22 OF 49

FIG.25

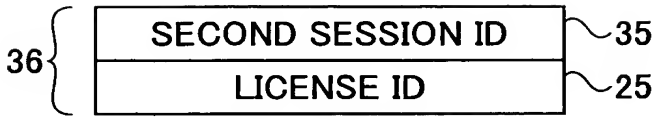


FIG.26

27

SECOND SESSION ID	SECOND SESSION OBJECT
1033965402176-4569106-116-112-5566-32-38-65	SECOND SESSION OBJECT 1
30381344-238876458-973625-3317296519	SECOND SESSION OBJECT 2
1822449637415-812365413-789613-88763	SECOND SESSION OBJECT 3
⋮	⋮

FIG.27

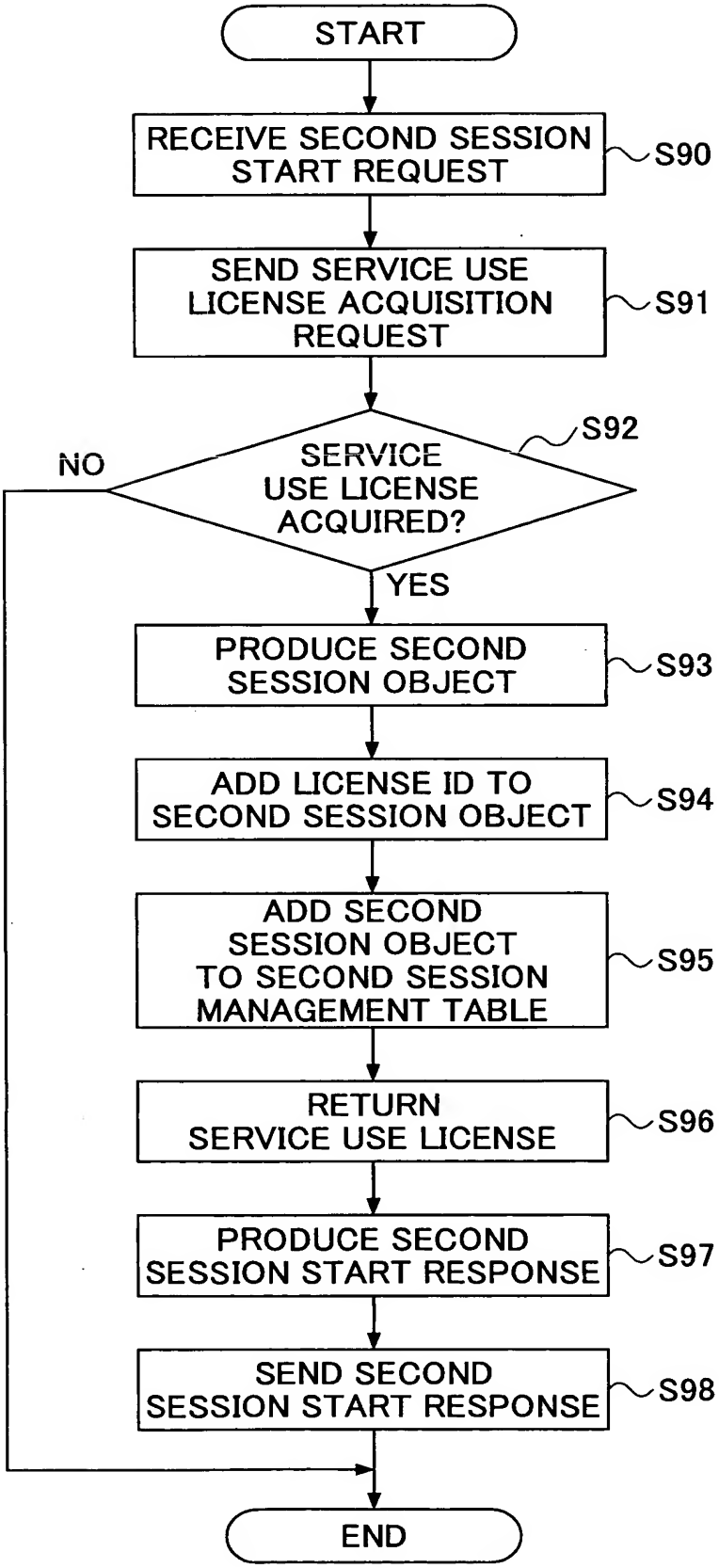

START
RECEIVE SECOND SESSION START REQUEST
S90
SEND SERVICE USE LICENSE ACQUISITION REQUEST
S91
SERVICE USE LICENSE ACQUIRED?
S92
NO
YES
PRODUCE SECOND SESSION OBJECT
S93
ADD LICENSE ID TO SECOND SESSION OBJECT
S94
ADD SECOND SESSION OBJECT TO SECOND SESSION MANAGEMENT TABLE
S95
RETURN SERVICE USE LICENSE
S96
PRODUCE SECOND SESSION START RESPONSE
S97
SEND SECOND SESSION START RESPONSE
S98
END

FIG.28

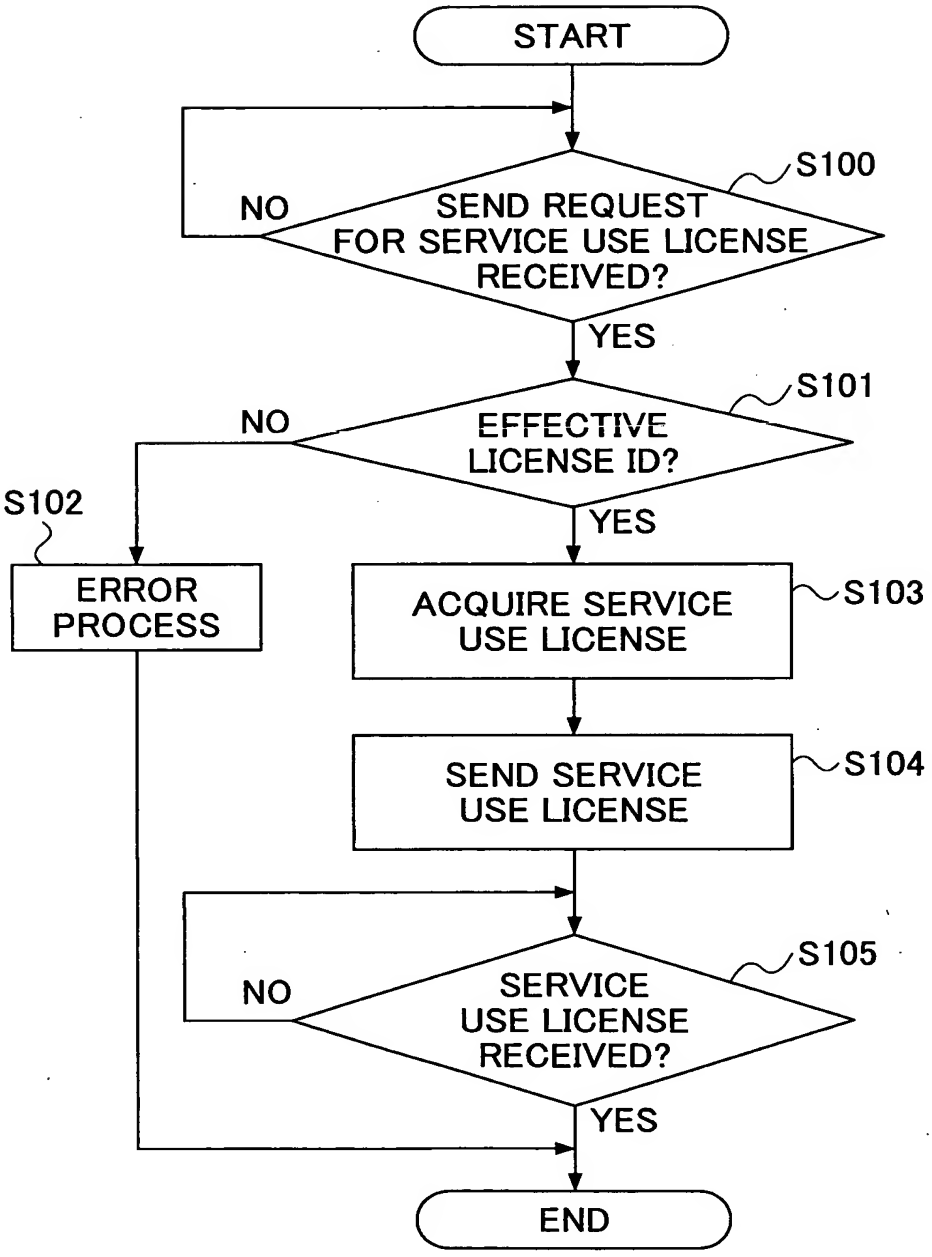

START
S100
NO
SEND REQUEST FOR SERVICE USE LICENSE RECEIVED?
YES
S101
NO
EFFECTIVE LICENSE ID?
YES
S102
ERROR PROCESS
ACQUIRE SERVICE USE LICENSE
S103
SEND SERVICE USE LICENSE
S104
S105
NO
SERVICE USE LICENSE RECEIVED?
YES
END

FIG.29

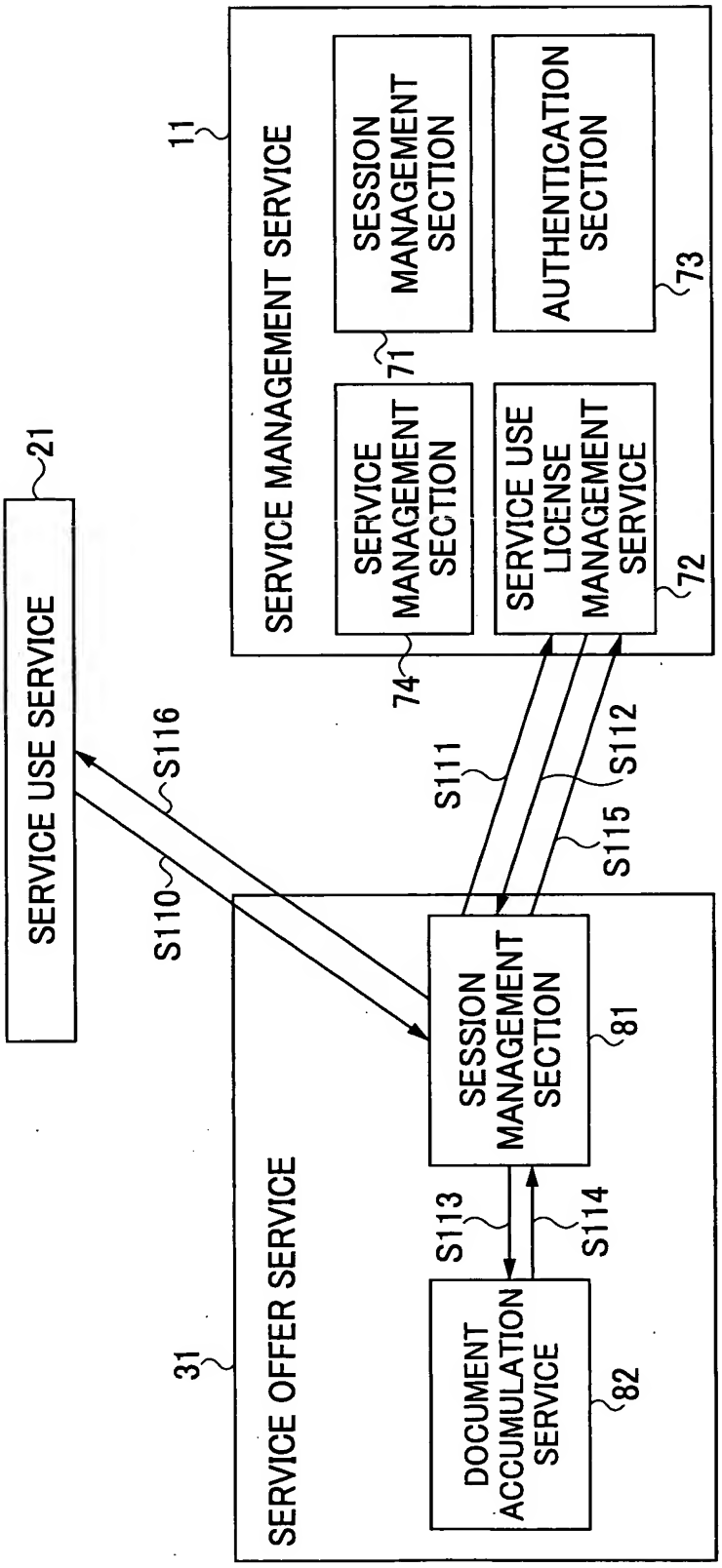

SERVICE USE SERVICE
21
S116
S110
11
SERVICE MANAGEMENT SERVICE
SESSION MANAGEMENT SECTION
71
AUTHENTICATION SECTION
73
SERVICE MANAGEMENT SECTION
74
SERVICE USE LICENSE MANAGEMENT SERVICE
72
S111
S112
S115
SESSION MANAGEMENT SECTION
81
S113
S114
DOCUMENT ACCUMULATION SERVICE
82
31
SERVICE OFFER SERVICE

FIG.30

```
<SOAP-ENV:Envelope
  xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
 <SOAP-ENV:Body>
  <tmns:getDocContent xmlns:tmns="urn:repository">
   <sessionId>1033965402176-4569106-116-112-5566-32-38-65</sessionId>
   <docId>uuid:repository;did=_1473943_3_1473943_661</docId>
  </tmns:getDocContent>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 27 OF 49

FIG.31

```
------=_Part_0_2485833.1034903827118
Content-Type: text/xml; charset=UTF-8
Content-Transfer-Encoding: binary
Content-Id: <8AA5025631210E0137EB5E9B442B4B3D>

<soapenv:Envelope  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
 <soapenv:Body>
  <ns1:getDocContentResponse soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
    xmlns:ns1="urn:repository">
   <returnValue href="cid:77EC3E1F8944DC83B9CB4AB28A341909">
  </ns1:getDocContentResponse>
 </soapenv:Body>
</soapenv:Envelope>

------=_Part_0_2485833.1034903827118
Content-Type: text/plain
Content-Transfer-Encoding: binary
Content-Id: <77EC3E1F8944DC83B9CB4AB28A341909>
Content-Disposition: attachment; filename=test.txt

test doc

------=_Part_0_2485833.1034903827118--
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 28 OF 49

FIG.32

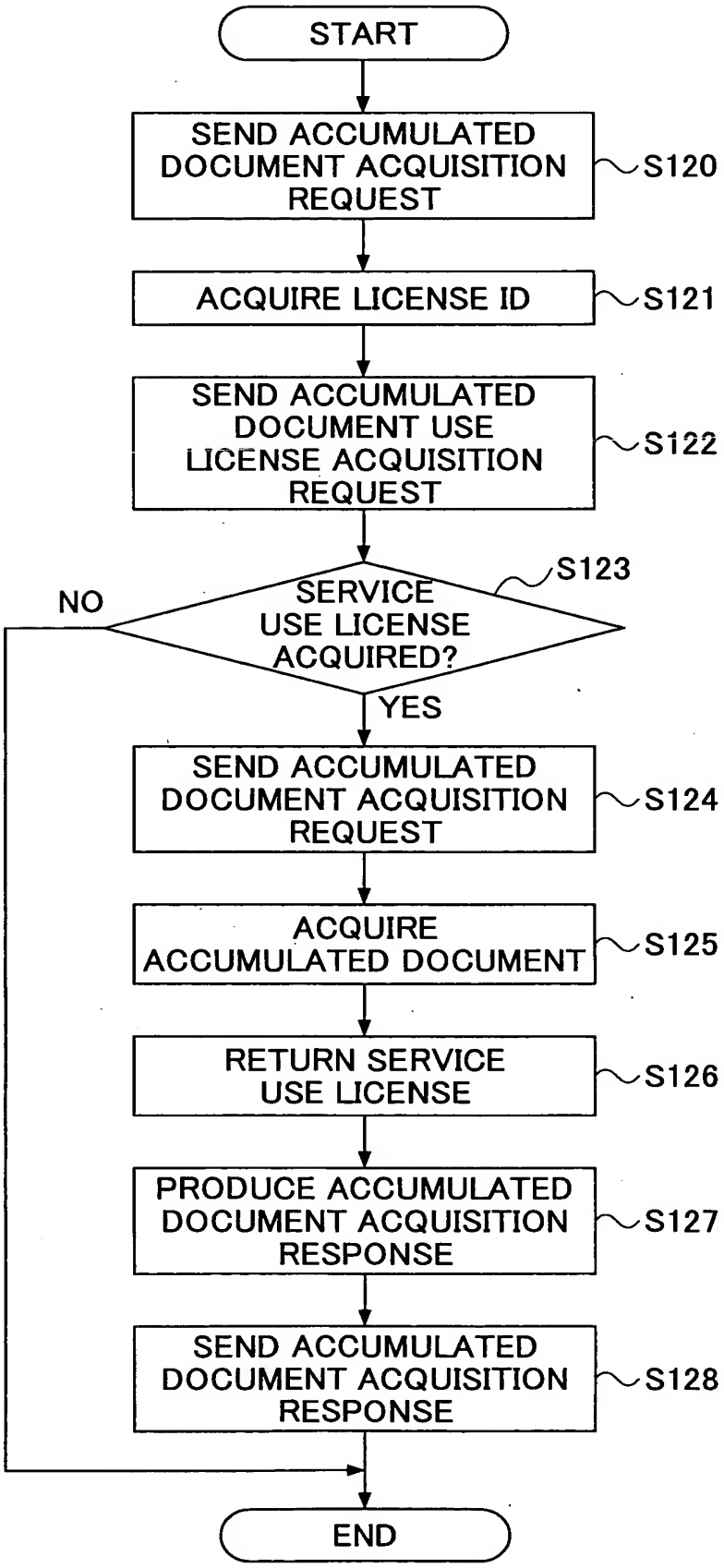

START
SEND ACCUMULATED DOCUMENT ACQUISITION REQUEST
S120
ACQUIRE LICENSE ID
S121
SEND ACCUMULATED DOCUMENT USE LICENSE ACQUISITION REQUEST
S122
SERVICE USE LICENSE ACQUIRED?
S123
NO
YES
SEND ACCUMULATED DOCUMENT ACQUISITION REQUEST
S124
ACQUIRE ACCUMULATED DOCUMENT
S125
RETURN SERVICE USE LICENSE
S126
PRODUCE ACCUMULATED DOCUMENT ACQUISITION RESPONSE
S127
SEND ACCUMULATED DOCUMENT ACQUISITION RESPONSE
S128
END

FIG.33

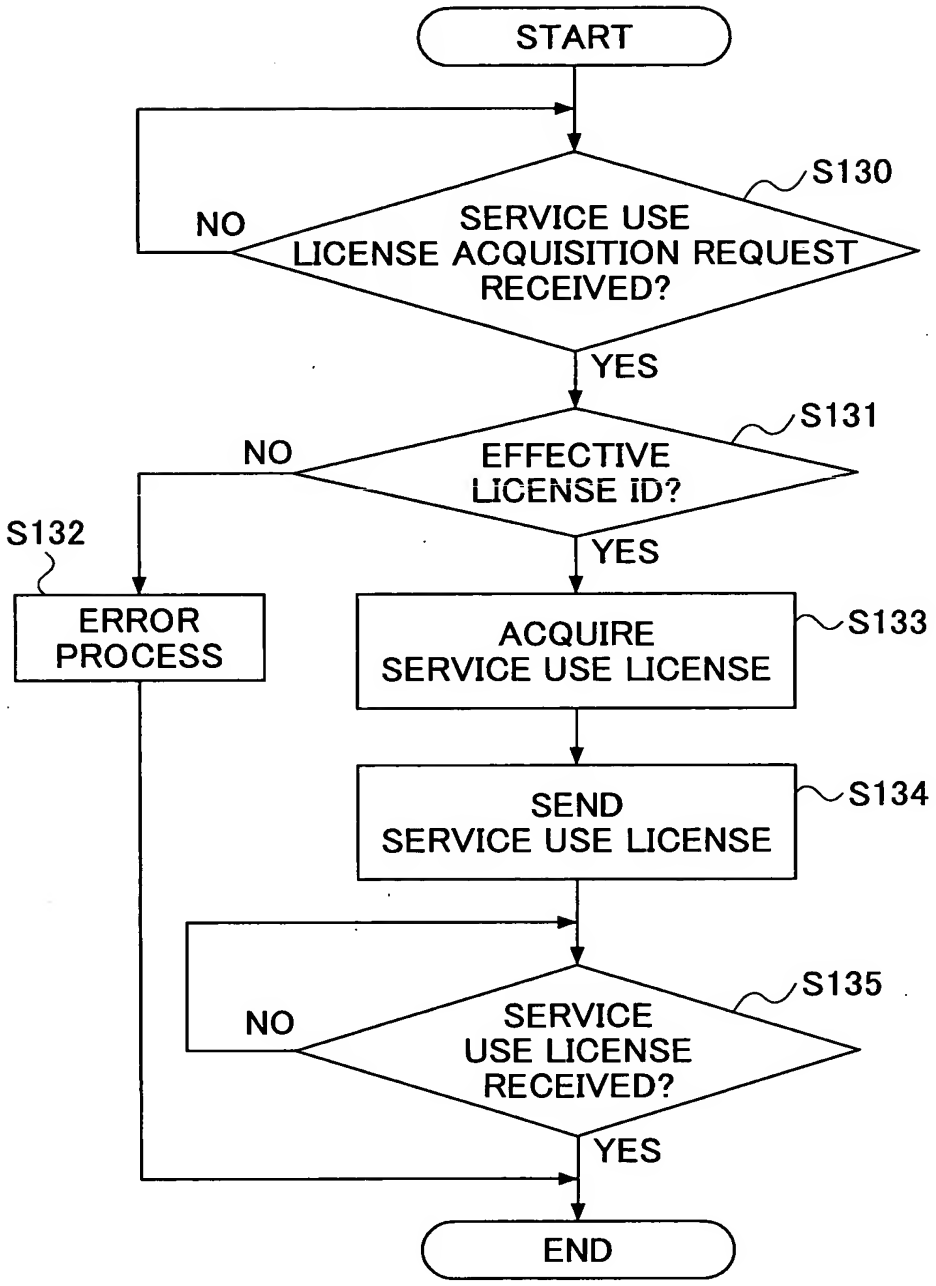

START
S130
SERVICE USE LICENSE ACQUISITION REQUEST RECEIVED?
NO
YES
S131
EFFECTIVE LICENSE ID?
NO
YES
S132
ERROR PROCESS
S133
ACQUIRE SERVICE USE LICENSE
S134
SEND SERVICE USE LICENSE
S135
SERVICE USE LICENSE RECEIVED?
NO
YES
END

FIG.34

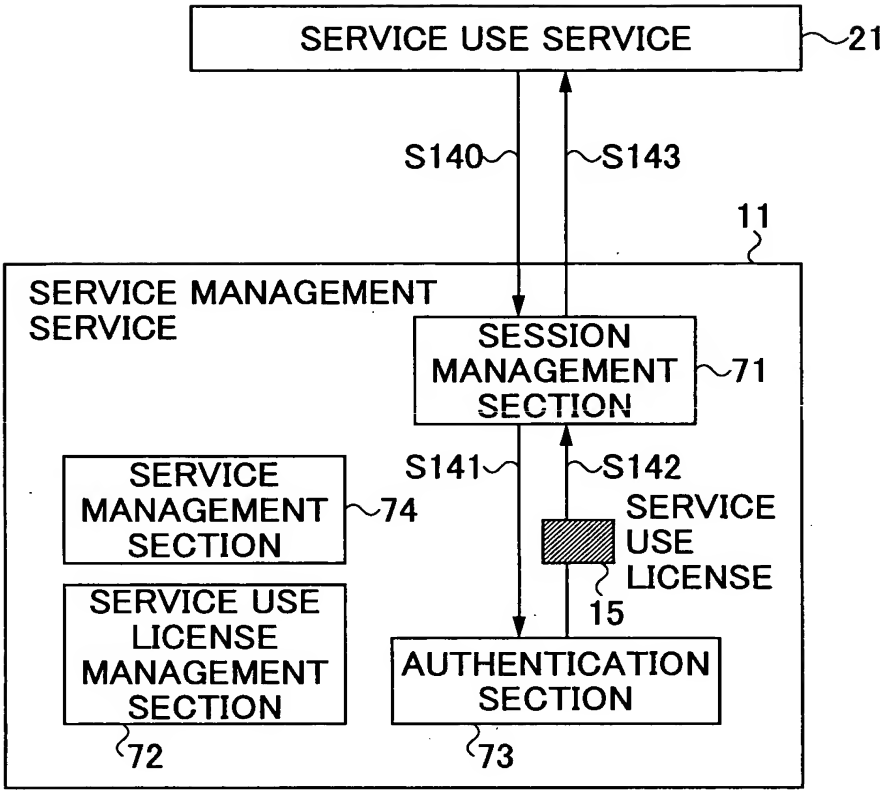

SERVICE USE SERVICE
21
S140
S143
11
SERVICE MANAGEMENT SERVICE
SESSION MANAGEMENT SECTION
71
S141
S142
SERVICE MANAGEMENT SECTION
74
SERVICE USE LICENSE
15
SERVICE USE LICENSE MANAGEMENT SECTION
72
AUTHENTICATION SECTION
73

FIG.35

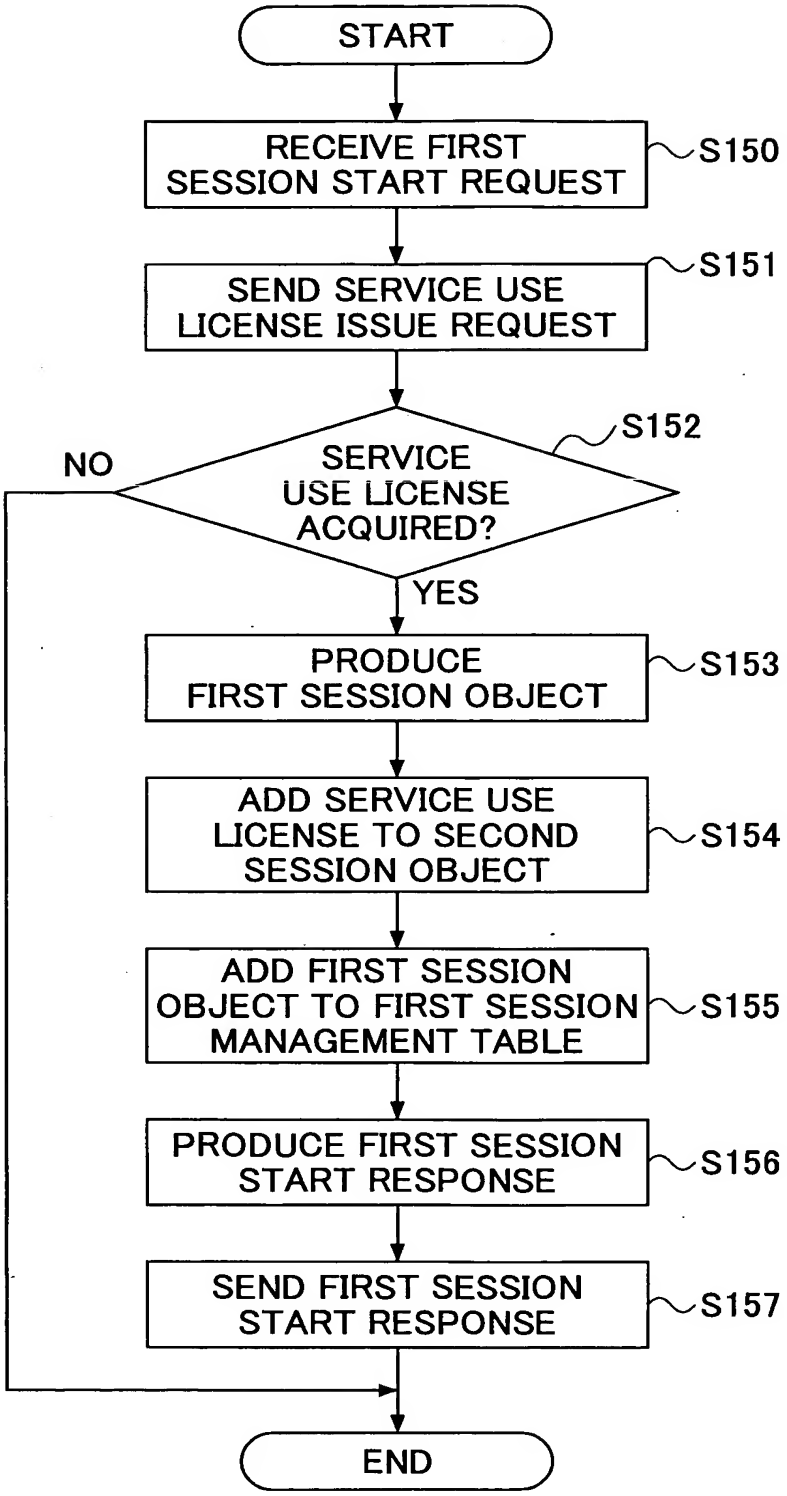

START
RECEIVE FIRST SESSION START REQUEST
S150
SEND SERVICE USE LICENSE ISSUE REQUEST
S151
SERVICE USE LICENSE ACQUIRED?
S152
NO
YES
PRODUCE FIRST SESSION OBJECT
S153
ADD SERVICE USE LICENSE TO SECOND SESSION OBJECT
S154
ADD FIRST SESSION OBJECT TO FIRST SESSION MANAGEMENT TABLE
S155
PRODUCE FIRST SESSION START RESPONSE
S156
SEND FIRST SESSION START RESPONSE
S157
END

FIG.36

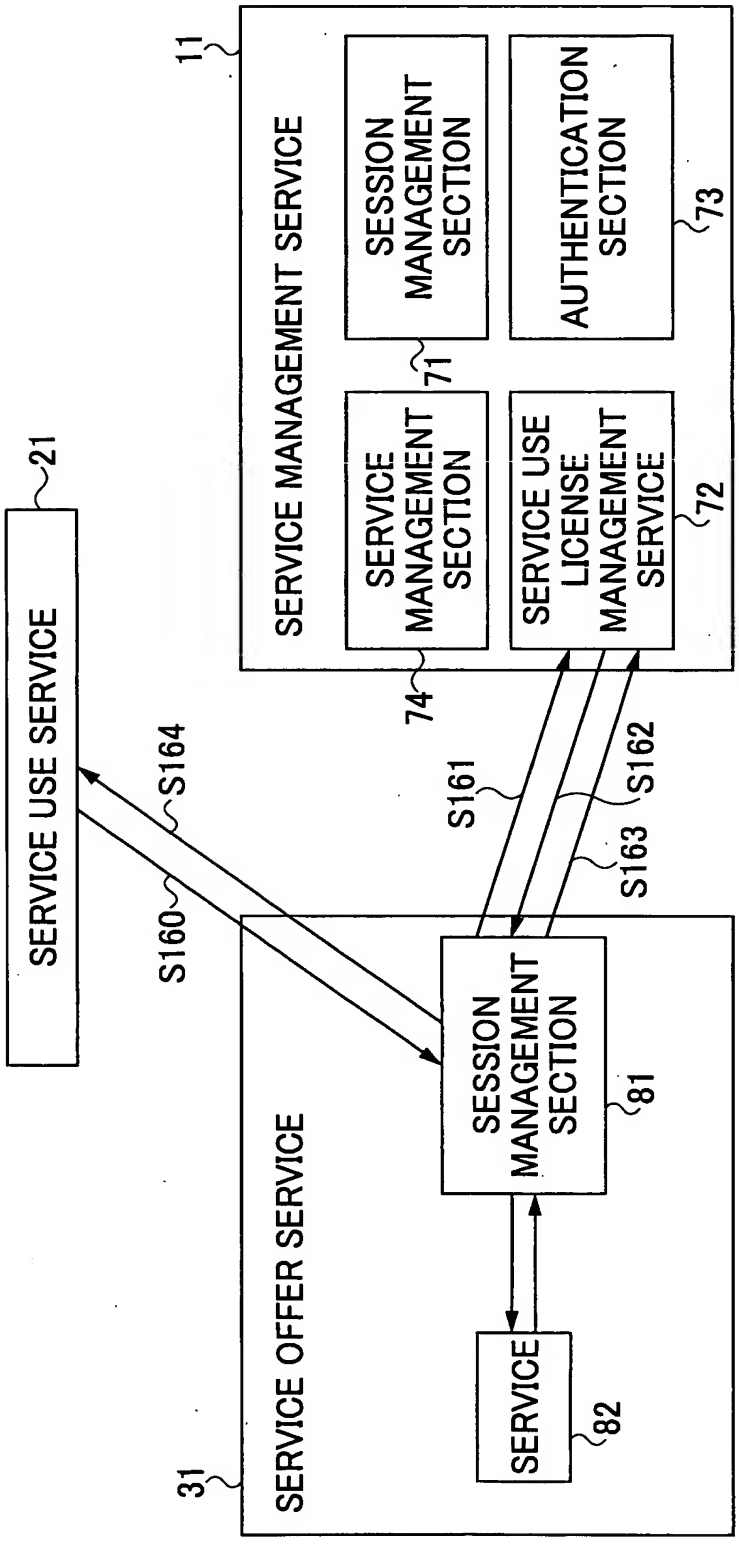

11
SERVICE MANAGEMENT SERVICE
SESSION MANAGEMENT SECTION
71
AUTHENTICATION SECTION
73
SERVICE MANAGEMENT SECTION
74
SERVICE USE LICENSE MANAGEMENT SERVICE
72
21
SERVICE USE SERVICE
S164
S160
S161
S162
S163
SESSION MANAGEMENT SECTION
81
SERVICE
82
31
SERVICE OFFER SERVICE

FIG.37

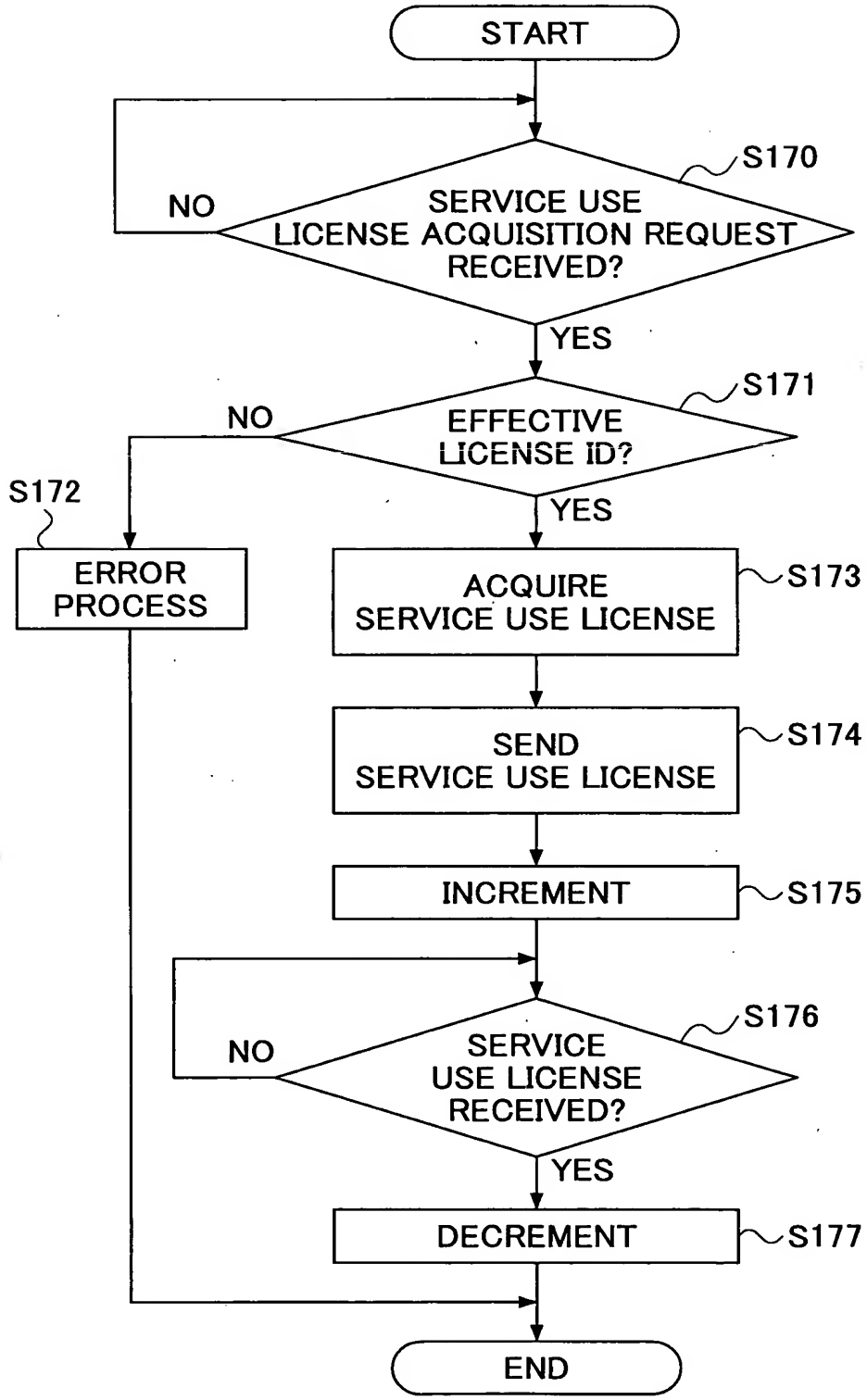

START
S170
SERVICE USE LICENSE ACQUISITION REQUEST RECEIVED?
NO
YES
S171
EFFECTIVE LICENSE ID?
NO
YES
S172
ERROR PROCESS
ACQUIRE SERVICE USE LICENSE
S173
SEND SERVICE USE LICENSE
S174
INCREMENT
S175
S176
SERVICE USE LICENSE RECEIVED?
NO
YES
DECREMENT
S177
END

FIG.38

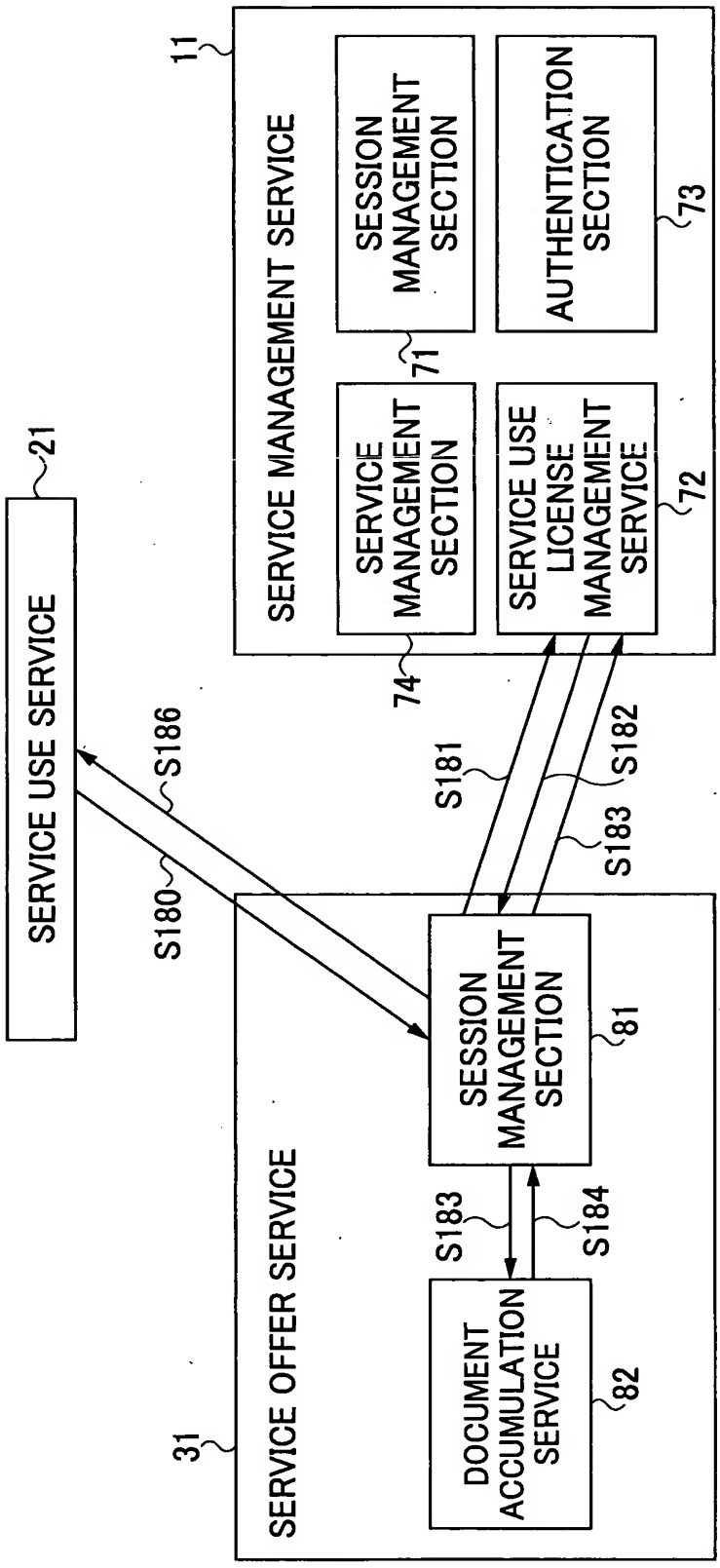

11
SERVICE MANAGEMENT SERVICE
SESSION MANAGEMENT SECTION
71
AUTHENTICATION SECTION
73
SERVICE MANAGEMENT SECTION
74
SERVICE USE LICENSE MANAGEMENT SERVICE
72
21
SERVICE USE SERVICE
S186
S180
S181
S182
S183
S183
S184
SESSION MANAGEMENT SECTION
81
31
SERVICE OFFER SERVICE
DOCUMENT ACCUMULATION SERVICE
82

FIG.39

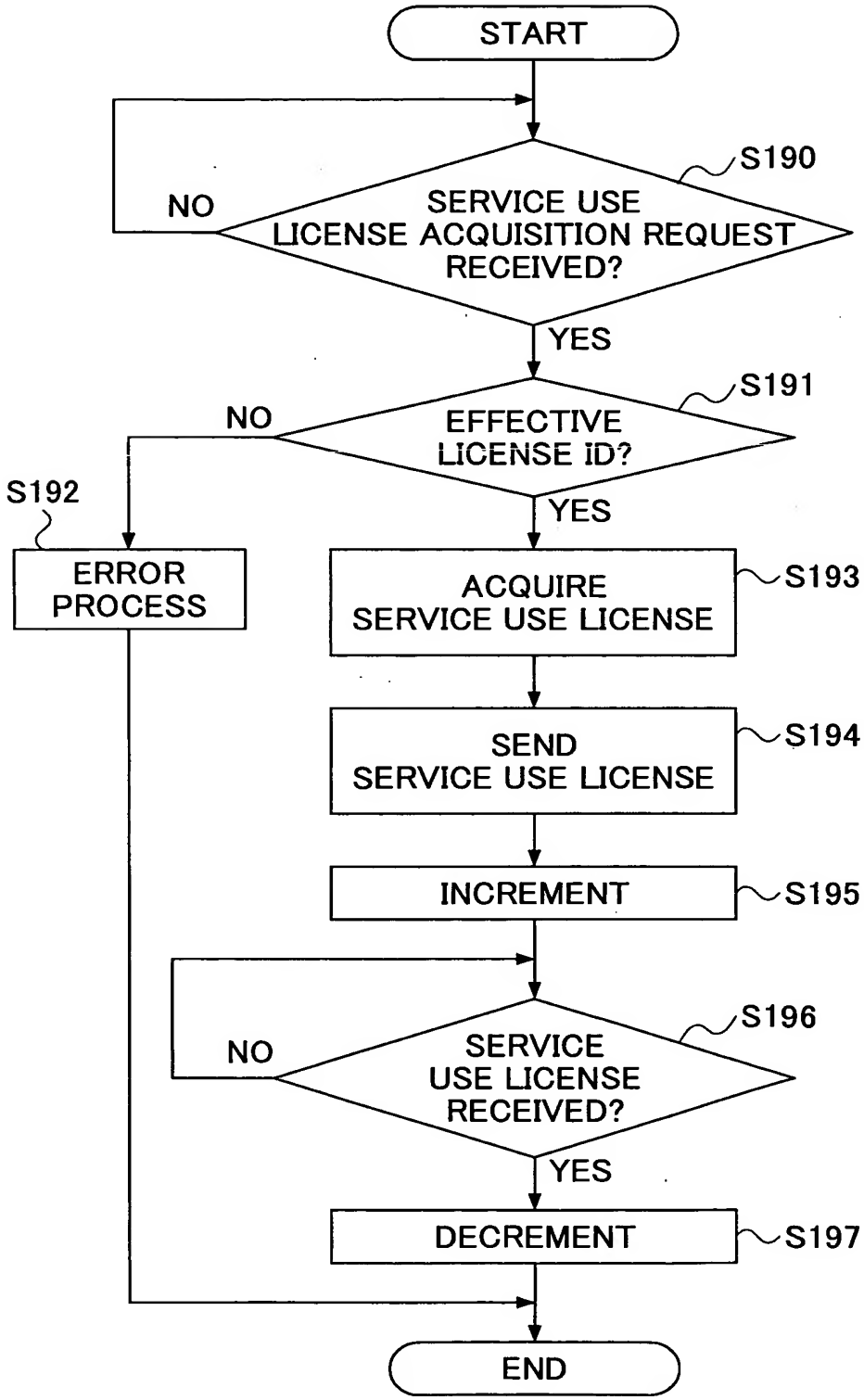

START
S190
SERVICE USE LICENSE ACQUISITION REQUEST RECEIVED?
NO
YES
S191
EFFECTIVE LICENSE ID?
NO
YES
S192
ERROR PROCESS
ACQUIRE SERVICE USE LICENSE
S193
SEND SERVICE USE LICENSE
S194
INCREMENT
S195
S196
SERVICE USE LICENSE RECEIVED?
NO
YES
DECREMENT
S197
END

FIG.40

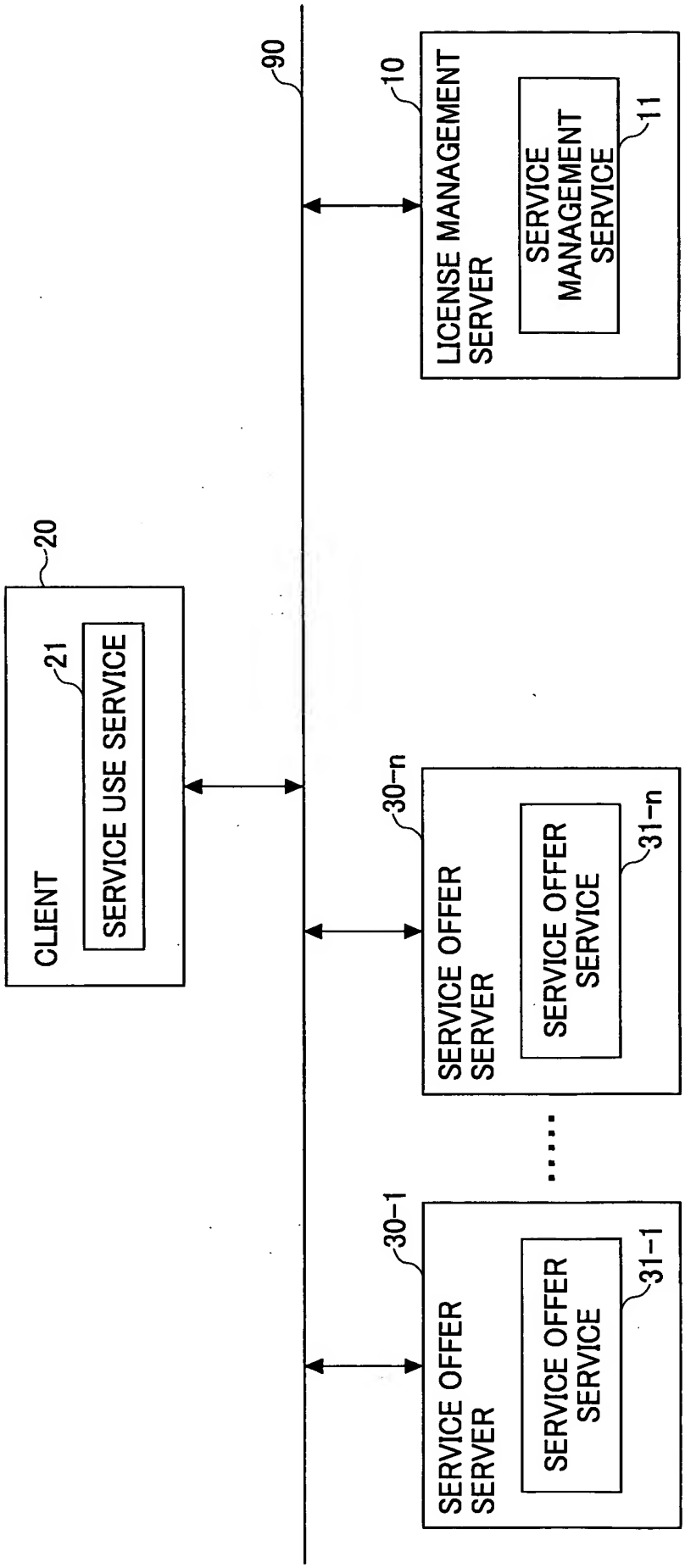

90
10
LICENSE MANAGEMENT SERVER
SERVICE MANAGEMENT SERVICE
11
20
CLIENT
21
SERVICE USE SERVICE
30-n
SERVICE OFFER SERVER
SERVICE OFFER SERVICE
31-n
30-1
SERVICE OFFER SERVER
SERVICE OFFER SERVICE
31-1

FIG.41

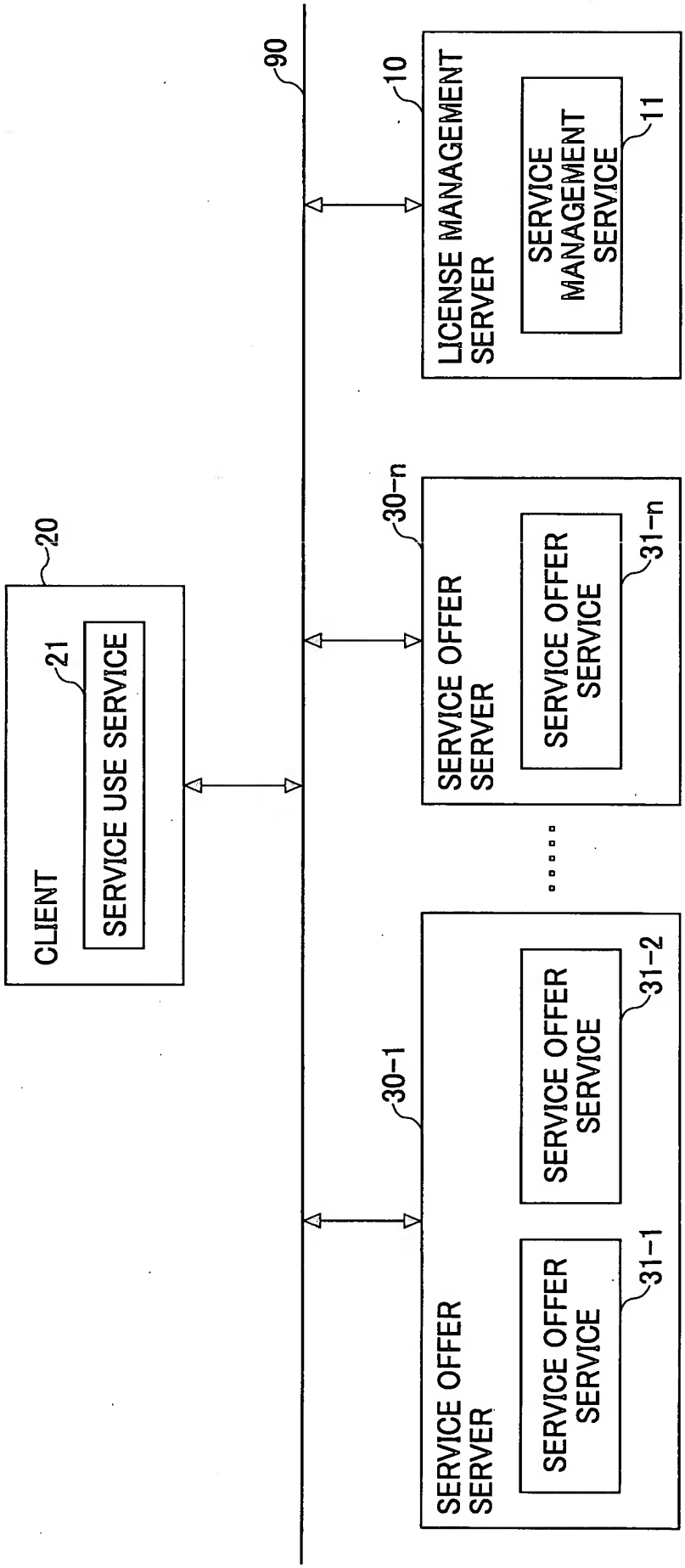

90
10
LICENSE MANAGEMENT SERVER
SERVICE MANAGEMENT SERVICE
11
20
CLIENT
21
SERVICE USE SERVICE
30-n
SERVICE OFFER SERVER
SERVICE OFFER SERVICE
31-n
30-1
SERVICE OFFER SERVER
SERVICE OFFER SERVICE
31-2
SERVICE OFFER SERVICE
31-1

FIG.42

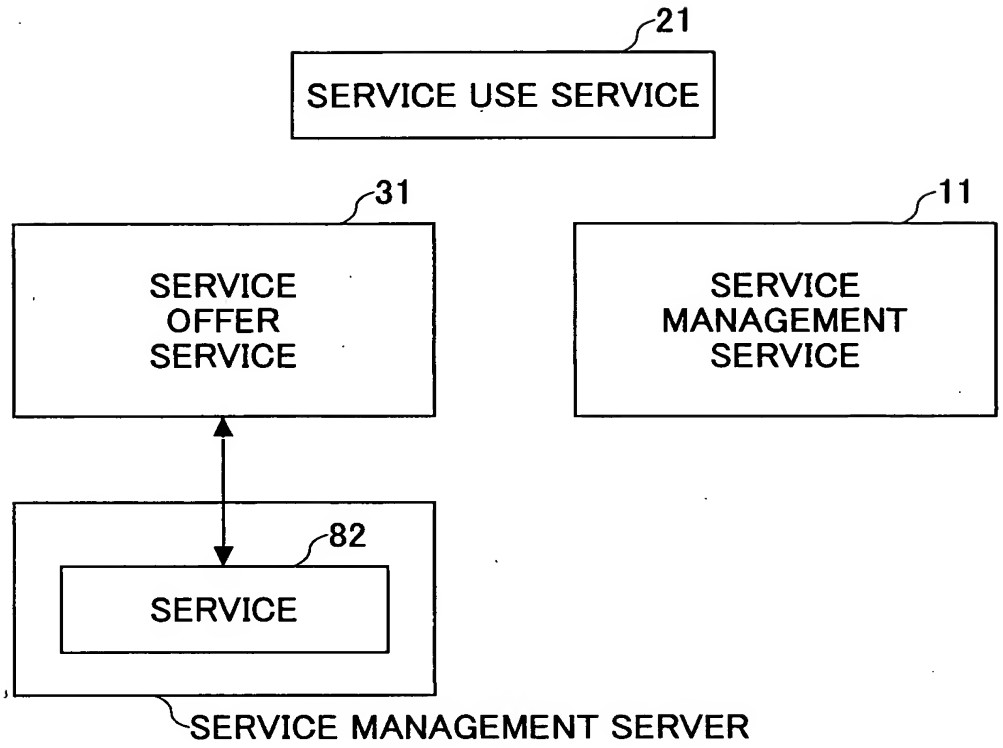

21
SERVICE USE SERVICE
31
SERVICE OFFER SERVICE
11
SERVICE MANAGEMENT SERVICE
82
SERVICE
SERVICE MANAGEMENT SERVER

FIG.43

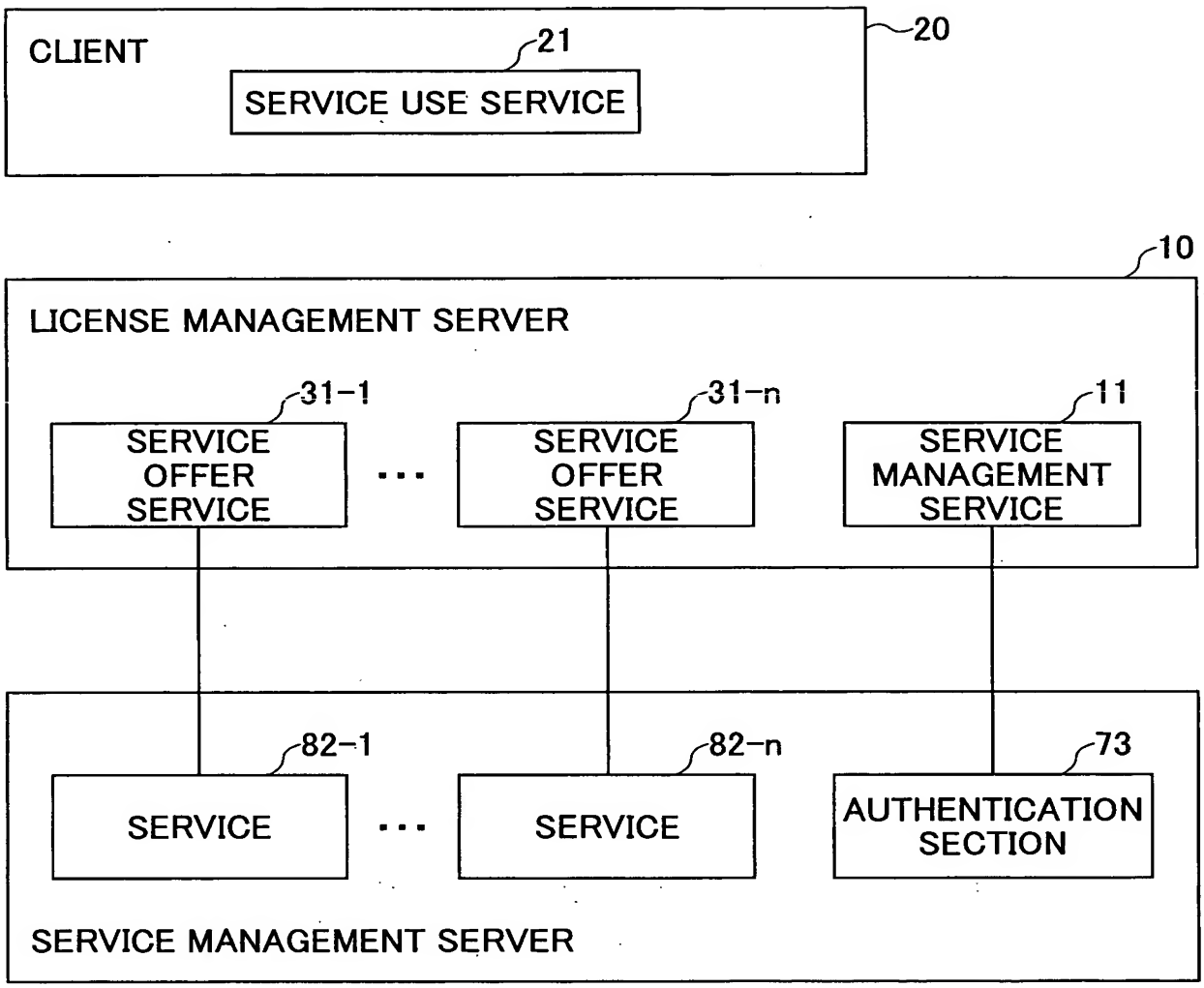

CLIENT
21
SERVICE USE SERVICE
20
10
LICENSE MANAGEMENT SERVER
31-1
SERVICE OFFER SERVICE
31-n
SERVICE OFFER SERVICE
11
SERVICE MANAGEMENT SERVICE
82-1
SERVICE
82-n
SERVICE
73
AUTHENTICATION SECTION
SERVICE MANAGEMENT SERVER

FIG.44

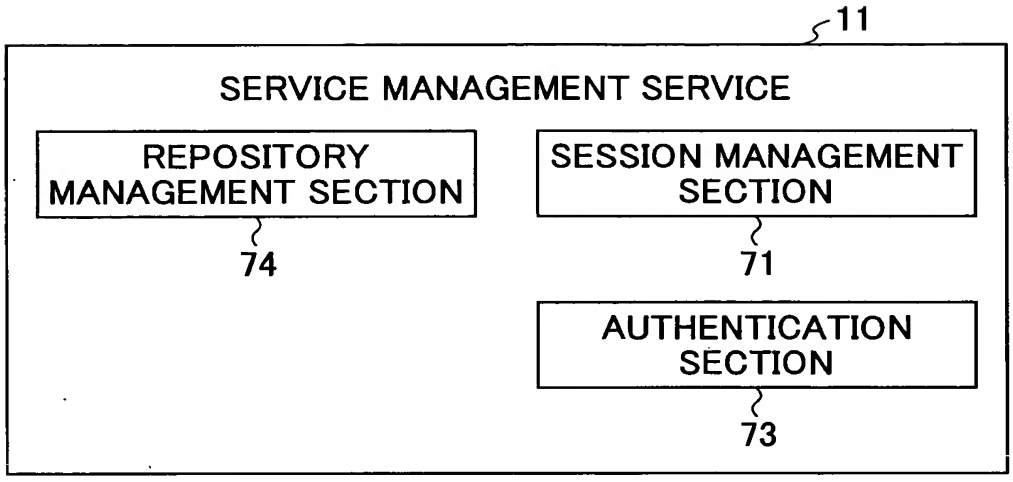

11
SERVICE MANAGEMENT SERVICE
REPOSITORY MANAGEMENT SECTION
74
SESSION MANAGEMENT SECTION
71
AUTHENTICATION SECTION
73

FIG.45

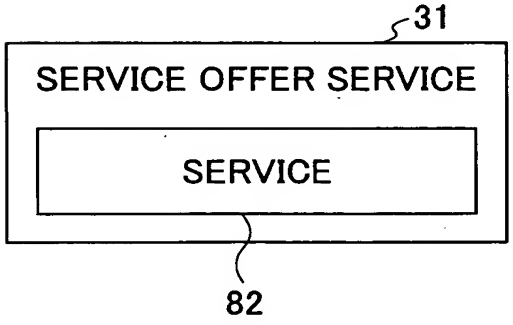

31
SERVICE OFFER SERVICE
SERVICE
82

FIG.46

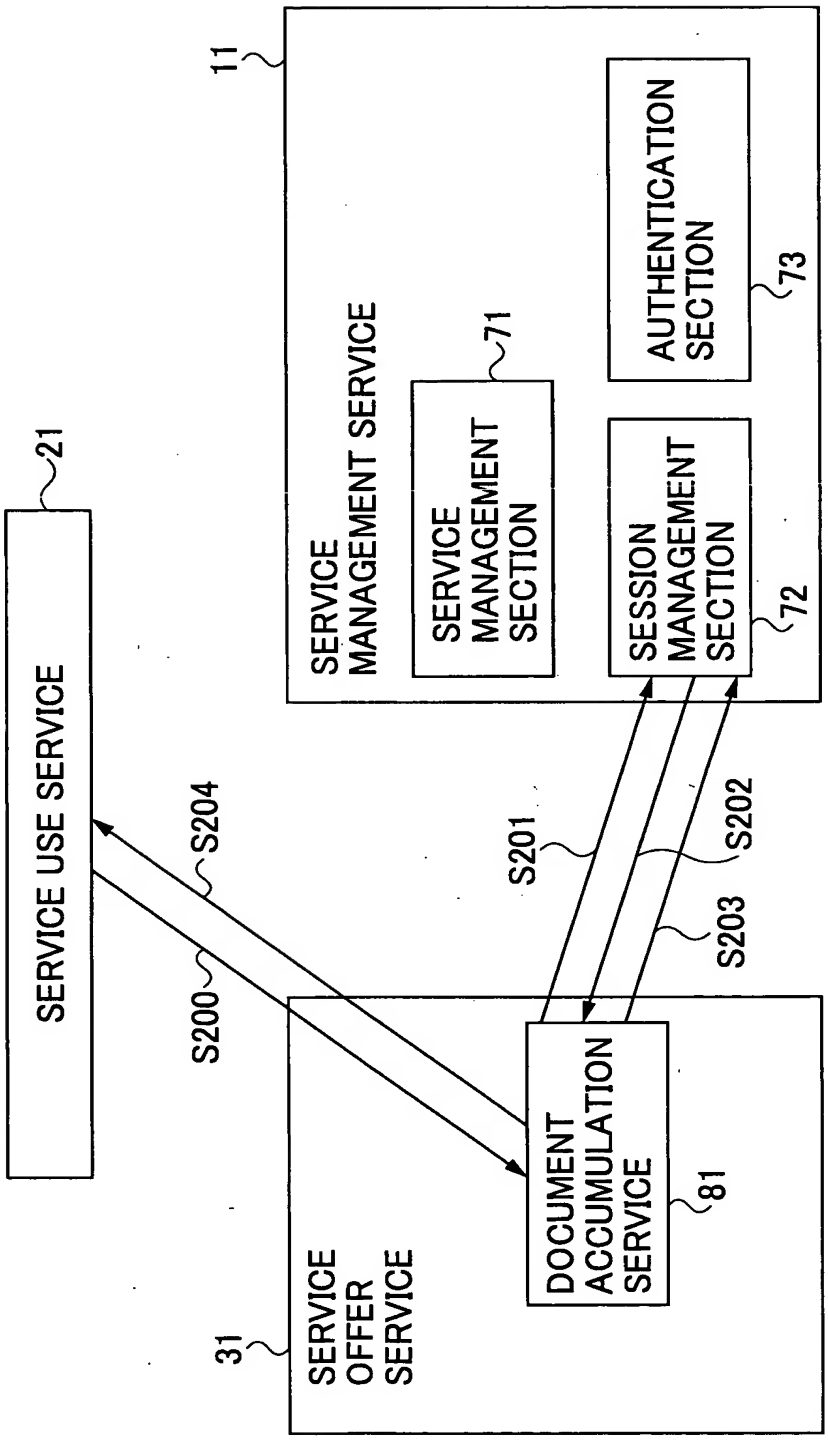

11
SERVICE MANAGEMENT SERVICE
SERVICE MANAGEMENT SECTION
71
SESSION MANAGEMENT SECTION
72
AUTHENTICATION SECTION
73
21
SERVICE USE SERVICE
S204
S200
S201
S202
S203
31
SERVICE OFFER SERVICE
DOCUMENT ACCUMULATION SERVICE
81

FIG.47

```
<SOAP-ENV:Envelope
  xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
  SOAP-ENV:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/">
 <SOAP-ENV:Body>
  <tmns:getDocContent xmlns:tmns="urn:repository">
   <sessionId>1033965393594-382386-42-59-12543481-32</sessionId>
   <docId>uuid:repository;did=_1473943_3_1473943_661</docId>
  </tmns:getDocContent>
 </SOAP-ENV:Body>
</SOAP-ENV:Envelope>
```

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 43 OF 49

FIG.48

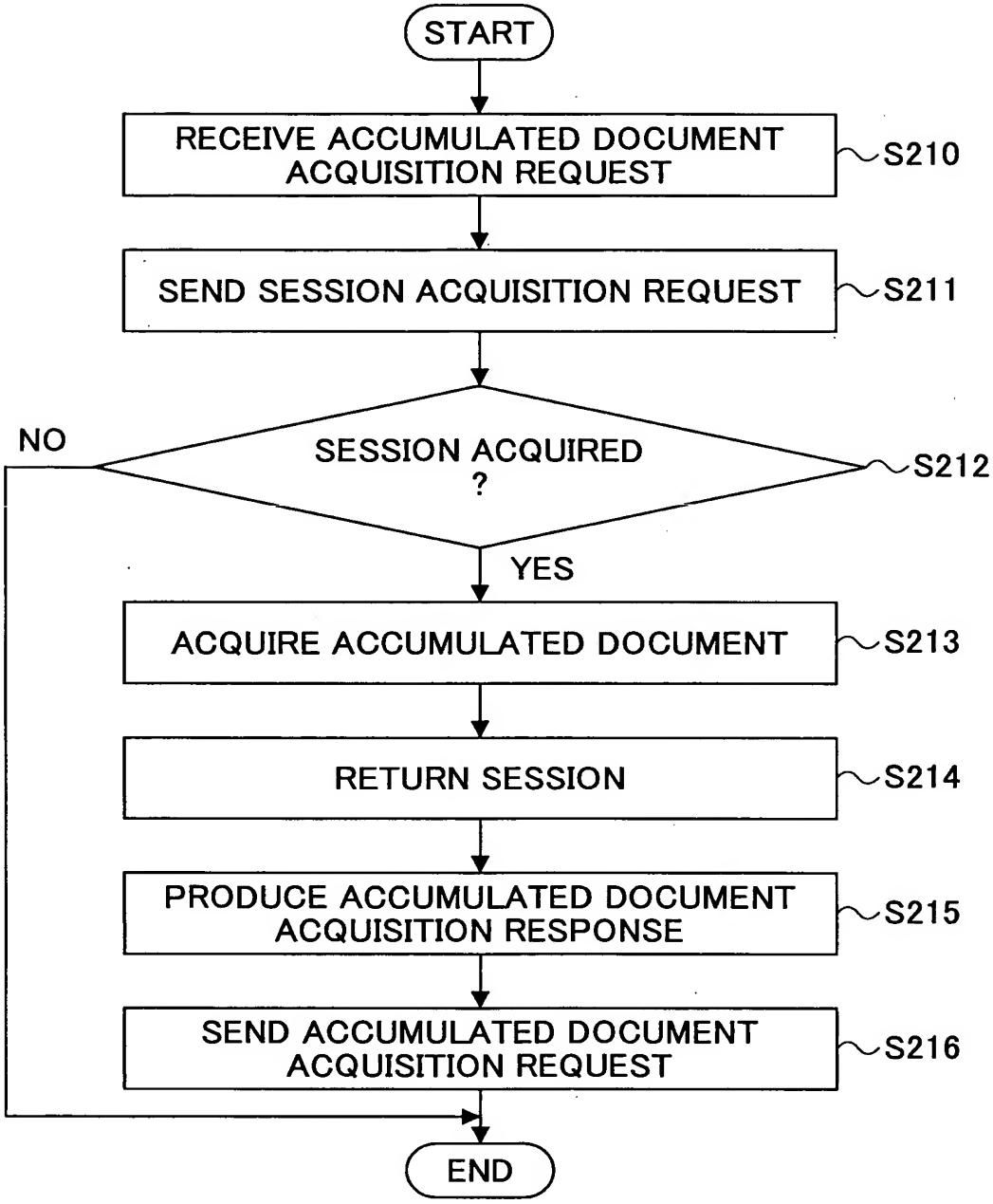

START
RECEIVE ACCUMULATED DOCUMENT ACQUISITION REQUEST
S210
SEND SESSION ACQUISITION REQUEST
S211
SESSION ACQUIRED ?
S212
NO
YES
ACQUIRE ACCUMULATED DOCUMENT
S213
RETURN SESSION
S214
PRODUCE ACCUMULATED DOCUMENT ACQUISITION RESPONSE
S215
SEND ACCUMULATED DOCUMENT ACQUISITION REQUEST
S216
END

FIG.49

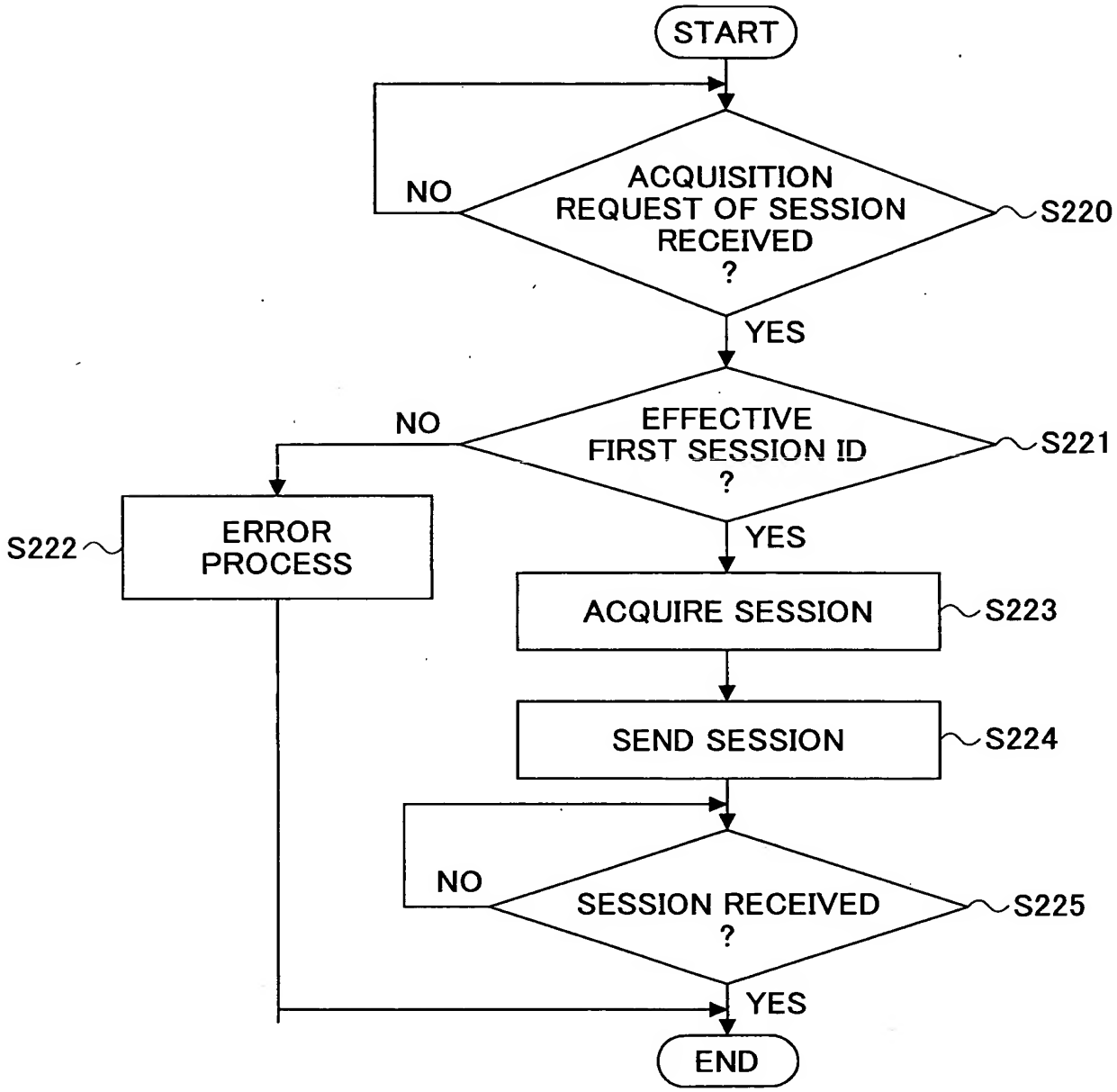

START
ACQUISITION REQUEST OF SESSION RECEIVED ?
NO
S220
YES
EFFECTIVE FIRST SESSION ID ?
NO
S221
YES
S222
ERROR PROCESS
ACQUIRE SESSION
S223
SEND SESSION
S224
NO
SESSION RECEIVED ?
S225
YES
END

FIG.50

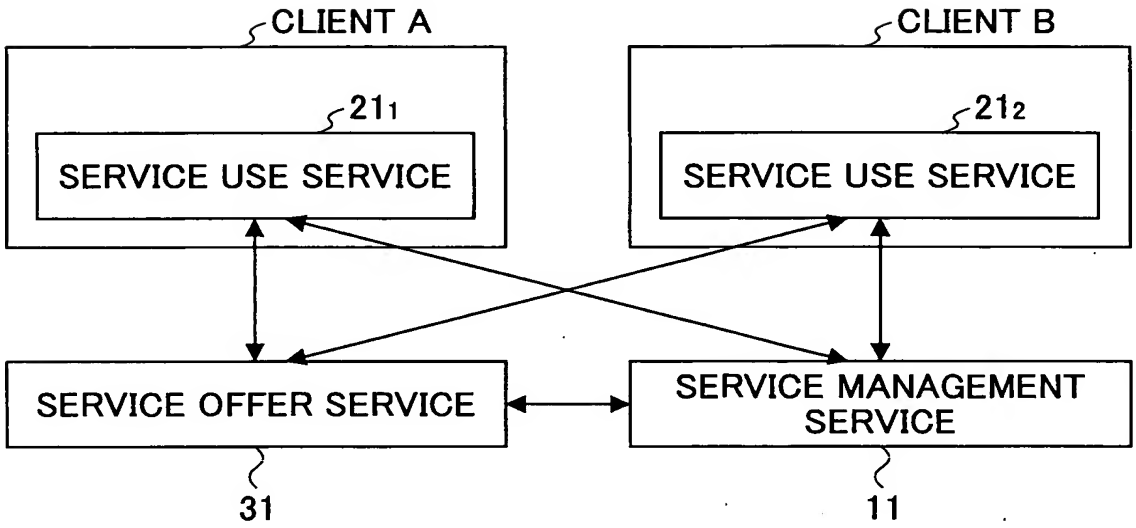

CLIENT A
CLIENT B
21_1
SERVICE USE SERVICE
21_2
SERVICE USE SERVICE
SERVICE OFFER SERVICE
SERVICE MANAGEMENT SERVICE
31
11

FIG.51

	ID TO CLIENT
FIRST	abd120238490fgava-fa8fafff988a:1
SECOND	abd120238490fgava-fa8fafff988a:2
THIRD	abd120238490fgava-fa8fafff988a:3
	⋮

	ID TO CLIENT
FIRST	fakdfe2349432qnfaewrOerae:1
SECOND	fakdfe2349432qnfaewrOerae:2
THIRD	fakdfe2349432qnfaewrOerae:3
	⋮

OBLON, SPIVAK, ET AL
DOCKET #: 245301US2
INV: Yohei YAMAMOTO
SHEET 47 OF 49

FIG.52

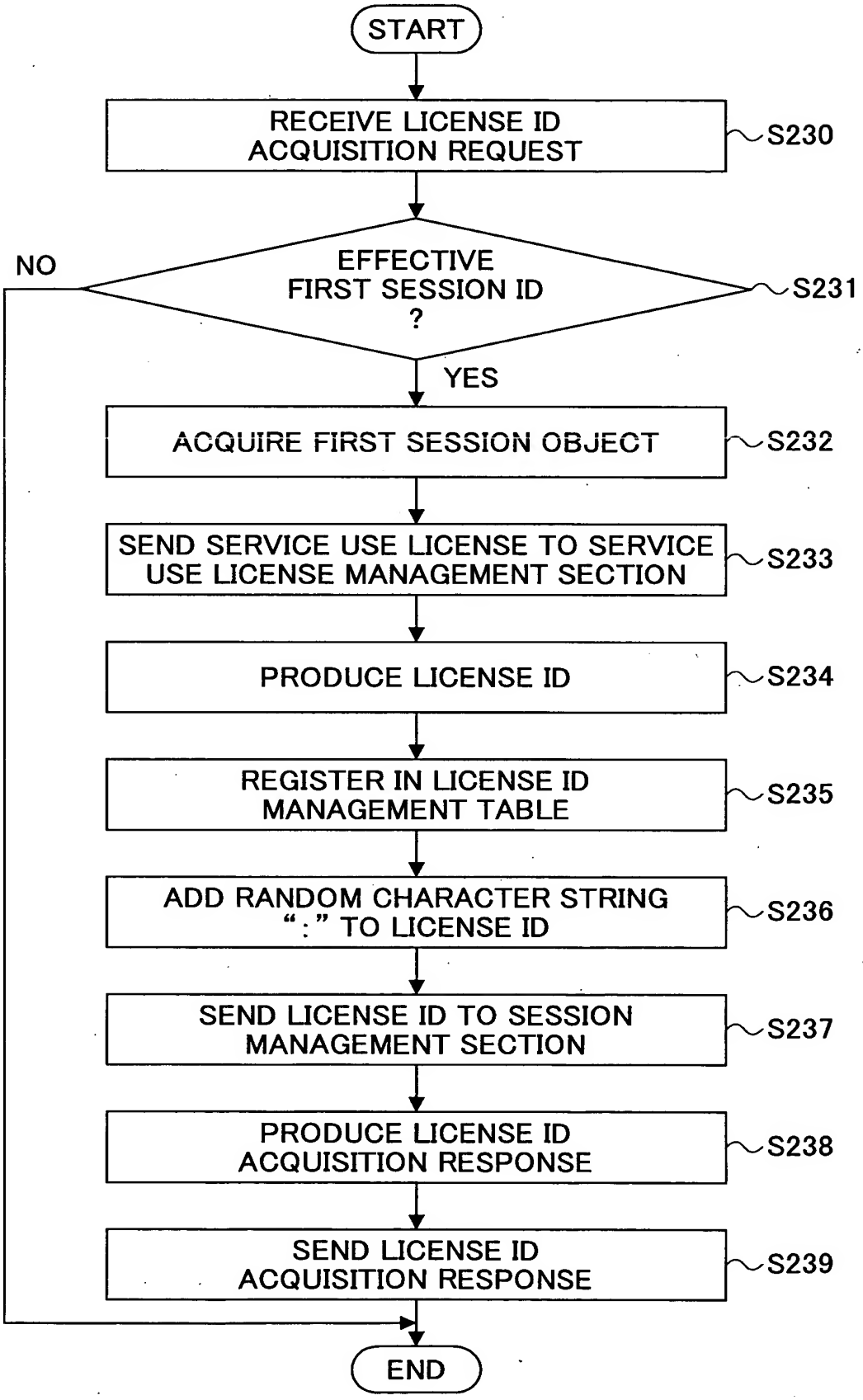
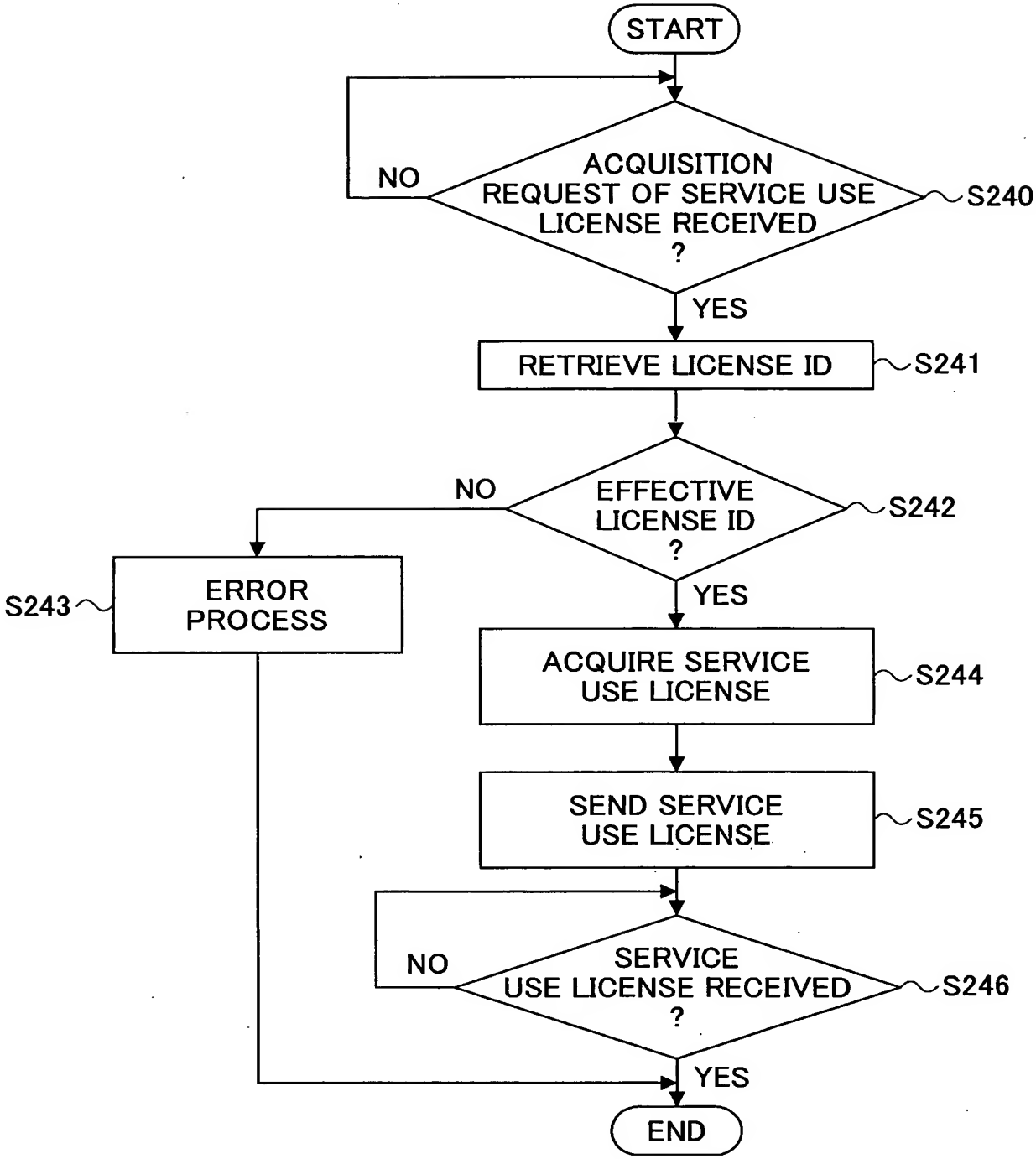

START
RECEIVE LICENSE ID ACQUISITION REQUEST
S230
EFFECTIVE FIRST SESSION ID ?
S231
NO
YES
ACQUIRE FIRST SESSION OBJECT
S232
SEND SERVICE USE LICENSE TO SERVICE USE LICENSE MANAGEMENT SECTION
S233
PRODUCE LICENSE ID
S234
REGISTER IN LICENSE ID MANAGEMENT TABLE
S235
ADD RANDOM CHARACTER STRING ":" TO LICENSE ID
S236
SEND LICENSE ID TO SESSION MANAGEMENT SECTION
S237
PRODUCE LICENSE ID ACQUISITION RESPONSE
S238
SEND LICENSE ID ACQUISITION RESPONSE
S239
END

FIG.53


START
ACQUISITION REQUEST OF SERVICE USE LICENSE RECEIVED ?
S240
NO
YES
RETRIEVE LICENSE ID
S241
EFFECTIVE LICENSE ID ?
S242
NO
YES
ERROR PROCESS
S243
ACQUIRE SERVICE USE LICENSE
S244
SEND SERVICE USE LICENSE
S245
SERVICE USE LICENSE RECEIVED ?
S246
NO
YES
END